DCN 6783

BRAC

CITY OF CHESAPEAKE, VIRGINIA

EXHIBITS

Chesapeake
VIRGINIA

CITY OF CHESAPEAKE

OFFICE OF THE CITY COUNCIL
306 CEDAR ROAD
CHESAPEAKE, VA 23322

PHONE 1-757-382-6153
FAX 1-757-382-6678

July 29, 2005

The Honorable Anthony J. Principi
Chairman
Defense Base Closure and Realignment Commission
2521 South Clark Street, Suite 600
Arlington, VA 22202

Dear Chairman Principi:

The City of Chesapeake joins the entire Hampton Roads region in sharing its concern regarding the addition of Oceana to the BRAC list. Enclosed for your consideration please find information pursuant to the NALF Fentress going back over 20 years and the City's efforts to minimize development impacts and preserve the integrity of the training experience. It is our belief that there has been a lack of clear documentation regarding development in the area, and are therefore, providing this for you. I would note that Chesapeake has long enjoyed a very effective working relationship with the Navy to ensure its significant investment is protected including the purchase of development rights on thousands of acres surrounding NALF Fentress; additionally, flight patterns have not been altered in the last 20 years.

Please be assured that the City of Chesapeake fully supports the U.S. Navy and has for many years undertaken an active approach to address jet noise and development encroachment issues to the fullest extent allowed under the laws of the Commonwealth of Virginia.

Sincerely,

Debbie Ritter

Debbie Ritter
Council Member

/pme

Enclosure

c: The Honorable Dalton S. Edge
Harold W. Gehman
Samuel K. Skinner
James T. Hill

BRAC 2005
CITY OF CHESAPEAKE, VIRGINIA EXHIBITS

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Chesapeake
VIRGINIA

RECEIVED
JUL 25 2005
CITY CLERK'S OFFICE

City of Chesapeake
Department of Planning
Post Office Box 15225
Chesapeake, Virginia 23328-5225
(757) 382-6176
FAX (757) 382-6406

MEMORANDUM

TO: ANNE F. ODELL, DEPUTY CITY MANAGER
ADMINISTRATION/LONG RANGE PLANNING

FROM: BRENT R. NIELSON, AICP, DIRECTOR OF PLANNING

DATE: JULY 26, 2005

RE: FENTRESS AREA DEVELOPMENT APPLICATIONS

Attached are two tables that provide basic information about rezoning and conditional use permit applications that have been acted on by City Council since 1995. The tables indicate the filing number for each application, application name, land use requested, City Council action, year acted upon, and the noise zone indicated in the Navy's AICUZ document.

Also, you asked if the City had strengthened the building codes for noise attenuation in the past 10 years. The Neighborhood Services Department indicated that the building code requirements for sound attenuation are found in Section 1206 of the IBC and only apply to residential structures. The standards have remained basically unchanged for the last 10 years. They do not apply to commercial buildings such as schools, businesses and mercantile buildings.

Virginia Beach has a code change pending for the new USBC to be adopted this year that will allow enforcement of sound attenuation for commercial structures as well, but it will only apply to master jet bases such as NAS Oceana and not to NALF Fentress. Neighborhood Services also indicated that over the past 5 years, the City has improved its ability to identify, track and document the attenuation standards for residential structures located in the highest noise zone.

Finally, you asked if any of the Hampton Roads Joint Land Use Study (JLUS) recommendations have been implemented in Chesapeake. Two of the recommendations have been implemented. The Comprehensive Plan, which was adopted in March 2005, included policies that would enhance the City's rural preservation efforts and control densities in the AICUZ area. Also, the City staff have been requesting "avigation easements" in conjunction with residential rezoning applications in the AICUZ area, as recommended in the JLUS. Please let me know if you have any questions regarding this information.

Attachments (2)

Cc: Ronald S. Hallman, City Attorney
✓Dolores A. Moore, City Clerk
Patrick M. Hughes, Director of Neighborhood Services Department

REZONING APPLICATIONS IN FENTRESS AREA
(1995 - Present)

Application	Application Name	Land Use	Council Action	Year	Noise Zone
R-95-13	John & Sylvia Staylor	Industrial	Denied	1995	70-75; >75
R-96-11	Ramsgate Corp., Inc.	Residential	Approved	1996	65-70
R-98-2	Stratford Terrace	Residential	Approved	1998	70-75; >75
R-98-12	Ramsgate Corp., Inc	Residential	Withdrawn	1998	>75
R-98-29	Charles & Johnnie Steinman	Office	Withdrawn	1998	65-70
R-98-30	Centerville Baptist Church	Institutional	Approved	1998	70-75
R-99-17	Mince Farm	Residential	Approved (Revoked in 2003)	1999	70-75
R-00-01	Ramsgate Corp., Inc	Residential	Approved	2000	65-70
R-00-17	Robert Diberardinis	Recreation	Withdrawn	2000	>75
R-01-17	Merrill Farm Subdivision	Residential	Denied	2001	70-75; >75
R-02-08	Ravenna	Residential	Approved	2002	70-75
R-02-46	Etheridge Square	Commercial	Withdrawn	2003	70-75
R-03-21	Mount Pleasant Crossing	Commercial	Approved	2003	65-70
R-04-23	Mount Pleasant Crossing	Commercial	Approved	2004	65-70
R-04-15	Centerville Contractors	Office/Warehouse	Approved	2004	70-75

CONDITIONAL USE PERMITS IN FENTRESS AREA

(1995 - Present)

Application	Application Name	Land Use	Council Action	Year	Noise Zone
UP-05-11	Bedford St. Parcel "B"	Welding contractor's office	Approved	2005	>75
UP-03-21	V.B. Rifle & Pistol Club	Target shooting facility	Withdrawn	2004	>75
UP-03-43	Anytime Educational Child Care	Day care center	Approved	2003	65-70
UP-02-17	Leader Hair Salon	Hair salon	Approved	2002	>75
UP-02-28	Yoder Property	Plumbing business	Approved	2002	>75
UP-02-49	Mt. Pleasant Mennonite Church	Church	Approved	2003	70-75
UP-02-60	Taylor's Do-It Center	Hardware store outside storage	Approved	2003	65-70
UP-02-55	V.B. Rifle & Pistol Club	Target shooting facility	Withdrawn	2003	>75
UP-01-03	Etheridge Greens	Golf course	Approved	2001	>75
UP-01-36	Centerville Care Facility	Residential care facility	Withdrawn	2001	65-70
UP-00-28	Mt. Pleasant Road Communication Tower	Cell Tower	Approved	2000	>75
UP-99-64	Crown Communication	Communication Tower	Approved	2000	>75
UP-97-19	Burden Wilmer	Church	Approved	1997	>75
UP-97-58	Schock Harness Repair Shop	Harness Repair Shop	Approved	1998	>75
UP-96-3	GTE South	Unmanned utility building	Withdrawn	1996	>75
UP-96-30	Richard C. Webb	Equipment storage yard	Denied	1996	>75
UP-96-33	Waterway Plumbing	Storage facility	Approved	1996	>75
UP-95-27	Miller Schuller	Freestanding mobile home	Approved	1995	>75
UP-95-40	Richard C. Webb	Equipment storage yard	Withdrawn	1995	>75
UP-95-48	Hayden Vet Clinic	Veterinary Clinic	Approved	1995	65-70
UP-95-52	Barkasi Kennels	Kennel	Approved	1995	>75

Chesapeake VIRGINIA

City of Chesapeake

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MEMORANDUM

To: The Honorable Mayor and Members of City Council

Through: Anne F. Odell, Deputy City Manager
Administration/Long Range Planning

From: Brent R. Nielson, AICP, Planning Director

Date: July 21, 2005

Subject: Chesapeake Jet Noise and Land Use Initiatives

As part of the preparation of the recently approved Joint Land Use Study (JLUS), staff from the Cities of Chesapeake, Virginia Beach, and Norfolk were requested to develop a listing of the various activities and initiatives each City had completed in the past to address jet noise and land use issues in the vicinity of the military air bases in each city. Attached is the listing that Chesapeake City staff prepared for the activities and initiatives instituted by Chesapeake.

Should City Council have any questions regarding this listing, please feel free to contact Planning Director, Brent Nielson.

cc: Dr. Clarence V. Cuffee, City Manager
Ronald S. Hallman, City Attorney
Dolores A. Moore, City Clerk

Summary of Initiatives to Address Growth Around Fentress Airfield NALF, Chesapeake, VA

February 23, 1988: Chesapeake City Council adopts current Land Use Plan and Basic Policies

Properties surrounding Fentress Airfield identified on land use plan for agricultural land use.

The "Basic Policies," which served as the foundation for the current comprehensive plan, included the following:

- The City should maintain working relationships with representatives of the U.S. Naval Airfield Fentress Station to mitigate the noise generated by air traffic and to update, if appropriate, and enforce land use controls within agreed upon AICUZ zones.

- Programs and regulations should be established, refined and implemented immediately to minimize noise and safety hazards generated by the U.S. Naval Airfield Fentress Station, and use of surrounding land should be appropriately controlled to avoid encroachment of incompatible development in the existing and future impact areas.

- The primary function of this area (Southern Chesapeake) is threefold: a) to provide and sustain agriculture and protect open space; 2) to provide for rural residential environments; and 3) to provide remote compatible sites for the U.S. Naval Airfield and Chesapeake Municipal Airport.

June 21, 1988: Zoning Ordinance Amendment (TA-Z-88-03)

This Zoning Ordinance amendment no longer allowed major subdivisions in the A-1, Agricultural District. Major subdivisions defined as those developments consisting of more than 5 lots or those for which the developer proposes to construct new streets to serve lots. Only minor subdivisions are allowed without the need to rezone property. This amendment was city-wide, but has served to curb residential development in rural area immediately surrounding Fentress that are not encumbered by air right easements.

July 24, 1990: Adoption of the Comprehensive Plan Policy Document

The Comprehensive Plan Policy Document was adopted in 1990. The Land Use Plan and Basic Policies, which were adopted in 1988, were affirmed and the Comprehensive Plan included implementation strategies to address the Fentress-related noise issues.

July 1990: Section 15.2-2232 Review of New Public Capital Facilities (formerly Section 15.1-456)

To implement the new Comprehensive Plan, the City instituted a review process for the review of public capital facilities under Section 15.2-2232 of the Virginia State Code (formerly Section 15.1-456). This section states that whenever the local planning commission recommends a comprehensive plan or part thereof for the locality and such plan has been approved by the local governing body, it shall control the general or approximate location, character and extent of each feature shown on the plan. If the feature is not shown on the plan, no street or connection to an existing street, park or other public area, public building or structure, public utility facility or public service corporation, whether publicly or privately owned can be constructed, established, or authorized until the general or approximate location, character and extent has been submitted to and approved by the commission as being substantially in accord with the adopted comprehensive plan or part thereof. 15.2-2232 review is applied for all city capital projects as well as capital projects constructed by a public utility corporation i.e., HRSD. This review has been effective in ensuring public capital facilities are built in accordance with policies found in the Comprehensive Plan.

October 16, 1990: Adoption of Fentress Airfield Study and Fentress Airfield Overlay District (with amendments adopted October 21, 1998)

This study established the need for an overlay district around Fentress. Following the study, an amendment to the Zoning Ordinance was passed establishing the overlay district. The amendment was then updated in 1998. The district applies to "all lots within the City located partially or wholly within AICUZ noise contours greater than 75 dB (Noise Zone 3) on the map entitled "NAS Oceana/NALF Fentress 1998 Noise Contours and APZ's," including all future amendments. This provision clarifies that is the Navy revised their maps, the area of applicability for Fentress Overlay District is also revised.

The Ordinance allows property owners to apply for a conditional use permit for certain light industrial uses regardless of the property's underlying zoning. Buildings and sites approved as part of the conditional use permit must meet certain performance standards, including noise abatement.

The ordinance is applied to the above referenced properties whether or not the Navy has purchased development rights for the property; however, it does not

prohibit residential development. If the underlying zoning allows for the construction of residential units, then they are permitted.

However, the ordinance requires that noise attenuation methods be used during building construction for all new residential units. Upgraded noise attenuation is mandatory for uses requiring a conditional use permit. Because state enabling legislation does not exist, the City cannot require anything beyond the Uniform Building Code for by-right development; however, it is encourage by City staff.

The City strongly encourages upgraded noise attenuation in the form of proffers for all rezonings where there is encroachment into the high noise areas. Because of the City's encouragement, the applicant's for Stratford Terrace and WoShepMor residential rezonings included noise attenuation for buildings in their proffer statements

The ordinance also requires that noise disclosure be noted on final plats, final plans or as part of a real estate transaction.

September 21, 1993: Establishment of the Rural Overlay District:

As part of the adoption of a new Zoning Ordinance in 1993, the City Council established four overlay districts for the City that dictate maximum densities, intended development and location of public utility facilities for different areas of the City based on the Comprehensive Plan recommendations. These overlay districts are called the Urban, Suburban, Countryside and Rural overlays. Fentress Airfield and surrounding properties are included in the rural overlay district. Although the districts are citywide, it has aided in the discouraging large scale development on properties surrounding Fentress NALF.

The rural overlay district prohibits major residential development. It also does not allow the extension of public utility facilities into these areas without express City Council approval. Since the Fentress Airfield and surrounding properties are in the rural overlay district, there have been no utility extensions that could accelerate the suburban pattern of development in this area of the City. The City staff has recommended no change to the rural overlay boundary for this area of the City as part of the comprehensive plan update process.

1997: HRSD Sewer Service Expansion Policy

The 1997 policy addresses proposed expansions of the HRSD sewer service lines beyond one mile from existing lines. It establishes the following criteria for the City Council to consider in reviewing such requests:

- Impact on the functional integrity of the City utility system

- Fiscal obligations of the city in operation and maintenance to accommodate the expansion, weighed against the public benefit.

Any expansion to the HRSD Sewer Service Area requires approval by City Council. This policy allows City Council to review proposed expansions on a case-by-case basis to ensure the expansion will not cause any degradation to the current sewer service system.

2001: Public Utilities Franchise Area Expansion Policy

The Franchise Policy provides that the City Council will "review and analyze all proposed expansions of the Public Utilities Franchise Area to ensure consistency with the [City's] Comprehensive Plan and the adequacy of Public Utilities to serve the area proposed for development."

The Public Utility Franchise Area is defined as those areas of the City designated as suitable for development. This does not include areas designated for rural scale development. The Rural Overlay District is not included in the Public Utility Franchise Area.

Since the Fentress Airfield and surrounding properties are in the rural overlay district, there have been no utility extensions that could accelerate the suburban pattern of development in this area of the City. The city staff has recommended no change to the rural overlay boundary for this area of the City as part of the comprehensive plan update process.

May 2, 2001: Final Report of the Chesapeake Jet Noise Task Force

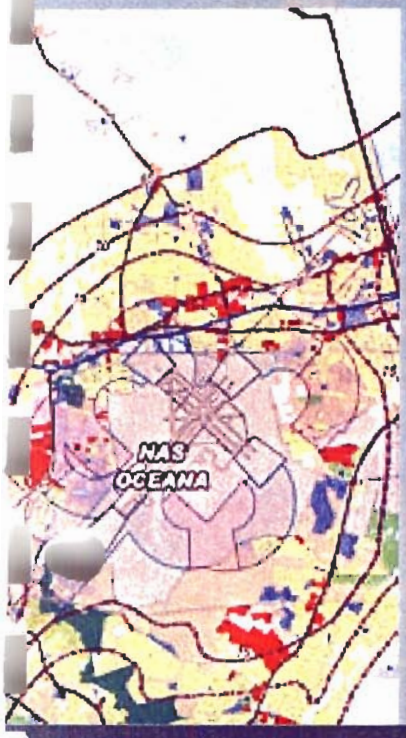
The City Council appointed the members of the Chesapeake Jet Noise Task Force in August, 2000. They were given a two-fold mission: to explore possible mitigation strategies concerning current FLCP operations at NALF Fentress, and to consider possible positions for the City to address concerning the EIS for the placement of F/A-18 E&F aircraft. The Task Force's final report, which was published on May 2, 2001, contained numerous findings and recommendations in areas such as zoning/rezoning, noise sensitivity zones, building codes, noise disclosure, communications, and scheduling/hours of operation/pattern maintenance, as well as a position on the EIS.

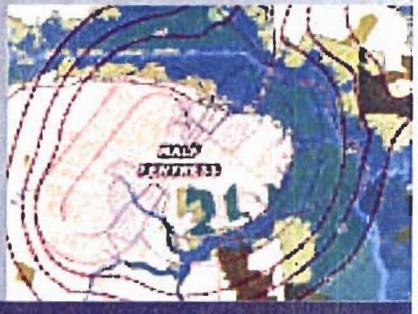
April 20, 2004: Amendments to the Fentress Airfield Overlay District (TA-Z-03-12)

This Zoning Ordinance text amendment expanded noise disclosure requirements to prospective purchasers of nonresidential and residential properties to all properties located in the Fentress AICUZ zones (Noise contours 65-70 dB DNL, 70-75 dB DNL and greater than 75 dB DNL).

Final

Hampton Roads
Joint Land Use Study





PREPARED FOR

Hampton Roads Planning District Commission

PREPARED BY

EDAW, Inc.

Kerr Environmental Services Corp.

Vanasse Hangen Brustlin, Inc.

The Miles Agency

APRIL 2005

EDAW

DESIGN, PLANNING AND ENVIRONMENTS WORLDWIDE

Acknowledgements

The Hampton Roads Joint Land Use Study (JLUS) was prepared with assistance from a number of individuals. Two committees - a Policy Committee and a Technical Committee (Working Group) - have guided the study and support its findings. The membership of these committees is as follows:

Policy Committee:

Ms. Debbie Ritter, Chesapeake City Council Member (Chair)

Mr. Dalton S. Edge, Mayor, City of Chesapeake

Ms. Anne F. Odell, Deputy City Manager, City of Chesapeake

Mr. Jeff Muzzy, Assistant City Manager, City of Norfolk

Mr. Donald L. Williams, Norfolk City Council Member

Mr. Barclay C. Winn, Norfolk City Council Member

Mr. James K. Spore, City Manager, City of Virginia Beach

Mr. Richard A. Maddox, Virginia Beach City Council Member

Mr. Jim Reeve, Virginia Beach City Council Member

RADM Stephen A. Turcotte, Commander, Mid-Atlantic Navy Region

CAPT Thomas Keeley, Commanding Officer, Naval Air Station Oceana

Mr. James M. (Mike) Davis, Associate Director, Office of Economic Adjustment

Technical Committee:

Mr. Art Collins, HRPDC Executive Director (Chair)

Mr. John Carlock, HRPDC Deputy Executive Director, Physical Planning

Ms. Nancy Collins, HRPDC Deputy Executive Director, Administration

Mr. Dave Gist, HRPDC Human Services Planner

Mr. Brent Nielson, Chesapeake Planning Director

Ms. Jaleh Shea, Chesapeake Planning

Mr. Jim Gildea, Norfolk Planning

Mr. Jeff Raliski, Norfolk Planning

This study was prepared under contract with the Hampton Roads Planning District Commission with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Hampton Roads Planning District Commission and the jurisdictions involved and does not necessarily reflect the views of the Office of Economic Adjustment.

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Technical Appendix

A.1 OPNAVINST 11010.36B Land Use Compatibility Tables

A.2 Sample Noise Reduction Standards for Residential Development (for MCAS Cherry Point, NC region)

A.3 JLUS-related 2005 Virginia State Legislature Amendments

A.4 Sample Avigation Easement (for Escambia County, FL)

A.5 Statement of Understanding between the City of Virginia Beach and the U.S. Navy

A.6 List of Federal Conservation Funding Opportunities

1.0 Study Purpose and Process

1.1 Introduction

The Hampton Roads region has been a home for U.S. Navy operations for over two centuries. Air operations were first initiated in the region during World War I at Chambers Field at Naval Station (NS) Norfolk and have increased significantly since then. Naval Air Station (NAS) Oceana was first established as an auxiliary airfield in 1943 and then designated as a major Navy jet air base in the 1950s. It is now one of the largest Navy air bases in the country and home for the F/A 18 Hornet and F-14 Tomcat jet squadrons. A third Navy airfield—Naval Auxiliary Field (NALF) Fentress—was established in 1940 as a support training facility for planes stationed at then NAS Norfolk and now serves as a major carrier landing training facility for aircraft stationed at NAS Oceana and Chambers Field.

At the same time, the region has continued to grow, for the most part proportionately with growth in the U.S. Navy's presence and role in Hampton Roads. The region also has developed an increasingly diversified economy and been extremely successful in attracting businesses, tourists and new residents. Recent population growth in the cities of Virginia Beach and Chesapeake has been dramatic with double digit increases in home sales and values.

Most significant to NAS Oceana, the population of Virginia Beach has exploded between its charter in 1963 and today. Following the annexation between Princess Anne County and the City, the new Virginia Beach embarked on a transition from rural area to suburban community. Now considered the largest city in the Commonwealth of Virginia, Virginia Beach has developed most of its vacant land, transitioning from a suburban to urban community, particularly over the last 10-15 years.

As a result, more residents now live in the path of active air operations at all three Navy airfields. Homes are located in the safety zones and noise contours associated with the three Navy airfields, and new development is proposed in some of these same areas. Conflicts are increasing between the need to provide for the safety and welfare of residents and the operational demands of the Navy's aviation mission in the Hampton Roads region.

- Local government approaches to developing and implementing land use policy and development controls to reduce the impacts associated with air operations.

These specific objectives support the primary goal of balancing long-term compatibility between the military operations and the vibrant economic and social growth of the surrounding communities.

1.3 Planning Area

The Hampton Roads JLUS addresses each of the Navy's airfields operating in the region (see Figure 1.1). The airfield sizes and services differ, ranging from outlying field services to a Master Jet Base. The airfields included in the study are:

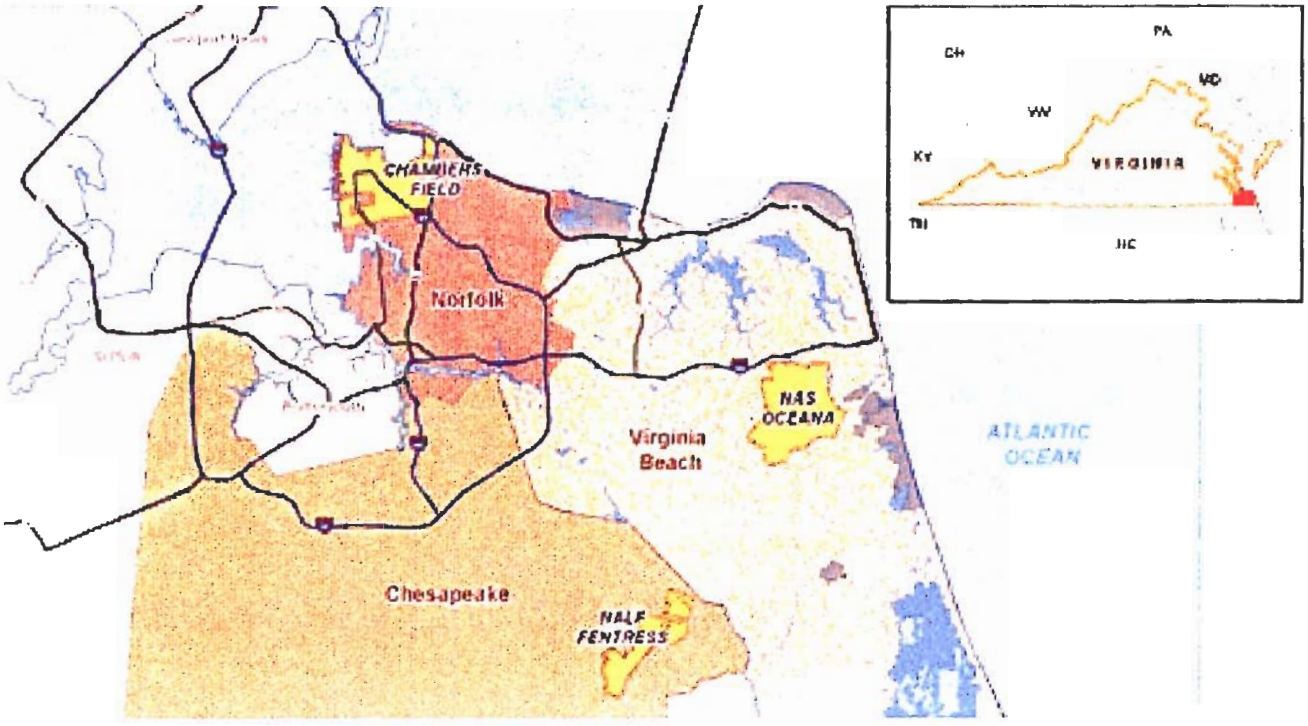
- ***Naval Air Station (NAS) Oceana*** is located in the eastern portion of the City of Virginia Beach. NAS Oceana is one of the Navy's largest air stations and home for F/A-18 C/D Hornet and F-14 Tomcat aircraft squadrons. Oceana will also station F/A 18 E/F Super Hornets, which are beginning to arrive and fly at the base in the fall of 2004, to replace the planned retirement of F-14's and older model F/A-18Cs over the next four years.
- ***Navy Auxiliary Landing Field (NALF) Fentress*** is located in the north-east quadrant of the City of Chesapeake, seven miles south of Oceana. Its primary use is for Field Carrier Landing Practice (FLCP) by aircraft stationed at both Oceana (F/A-18 and F-14) and Chambers Field (E-2/C-2).
- ***Chambers Field at Naval Station (NS) Norfolk*** is located within the Naval Station boundaries in Norfolk and home for E-2 Hawkeye and C-2 Greyhound aircraft squadrons along with a variety of helicopter units. Chambers Field also is an air logistics hub for airlifting military personnel and material to other U.S. bases and abroad.

A brief history and description of current air operations at each of these bases is provided in Chapter 2.

1.4 Participating Stakeholders

An underlying goal of the JLUS process is the involvement of key stakeholder and community perspectives in crafting the final consensus-based plans for each jurisdiction. The Hampton Roads JLUS utilized two primary committees for decision-making throughout the process. Interviews with public stakeholders and representatives augmented the planning and decision-making process of both committees.

Figure 1.1 Regional Map



Policy Committee

This committee represents city officials from Virginia Beach, Chesapeake and Norfolk, military installation leaders, and Federal agency representatives. The committee provides overall direction to the planning process, approves study recommendations, and endorses appropriate implementation recommendations identified by the Working Group.

The Policy Committee has met in conjunction with the Working Group three times during the course of the project. Meetings included the Project Kick-off in July 2004, a review of Draft Recommendations during December, and a Final Report review and discussion during February-April 2005.

Technical Committee (Working Group)

This committee represents technical representatives from each city's planning departments, military installation planners, and the Chair of the Policy Committee. The aforementioned chair was included to provide consistency and feedback to her fellow elected officials on the Policy Committee. The Working Group met in conjunction with the Policy Committee, as well as alone during the planning process in order to

Table 1.2 **Roles and Responsibilities**

	Responsibilities	Participants
Study Sponsors	Coordination Accountability Grant Management Financial Contribution	City of Virginia Beach City of Chesapeake City of Norfolk OEA HRPDC
Policy Committee	Policy Direction Study Design & Oversight Monitoring Report Adoption	City Officials from Each Jurisdiction: - City Manager or designee - City Council Representatives Navy Representatives OEA Representative
Technical Committee (Working Group)	Technical Issues Alternatives Report Development Recommendations	Planning Representatives from Each Jurisdiction Navy Representatives OEA Representatives HRPDC Representatives

discuss relevant issues, share information, and investigate preliminary recommendations. Over a half dozen meetings were held throughout the course of the project, beginning with the kick-off and ending with the Final Report in April 2005.

Table 1-2 represents the general roles and responsibilities of the technical and policy committees, as recommended by the DoD *JLUS Program Guidance Manual,* along with committee representation for the Hampton Roads JLUS.

1.5 Public Participation Opportunities

In addition to the Policy Committee and Working Group Meetings, the JLUS team has conducted two "open house" public involvement events. These open houses gave residents an opportunity to understand the existing issues, review draft recommendations, and provide input on implementation strategies. Representatives of each participating city planning department, the Navy, HRPDC, OEA and the project consultants were available for questions and comments.

Public Workshops were conducted at the HRPDC Regional Building, as follows:

- **August 17, 2004** – An overview of the JLUS purpose, goals, and a brief summary of existing conditions;
- **December 2, 2004** – A review of draft tools recommended to reduce air safety and noise-related impacts around each Navy airfield.

A public website was also established, providing information on the planning process, meeting dates, and draft documents for public review. The website can be accessed at http://www.hrpdc.org/jlus/.

In addition to the JLUS public workshops, the cities of Virginia Beach and Chesapeake have conducted parallel efforts to solicit public participation and feedback during the summer/fall of 2004 and winter/spring of 2005. A series of meetings and interviews were conducted to engage and inform community interests in the planning process. In Virginia Beach, twelve different community groups have participated in these meetings along with City representatives, Council members and planning staff. In Chesapeake, an open house was conducted to solicit input and provide information on the study. The various informational meetings that have occurred in the two jurisdictions related to the JLUS include the following:

- Virginia Beach Stakeholder interviews: August/September, 2004
- Virginia Beach Stakeholder Group Meeting #1: August 23, 2004
- Chesapeake Open House: September 30, 2004
- Virginia Beach Stakeholder Group Meeting #2: October 21, 2004
- Virginia Beach Town Hall Meetings: January 31 and February 2, 2005
- Virginia Beach Public Information Forum: March 17, 2005

The City of Virginia Beach has also convened its AICUZ Task Force during fall 2004 and winter 2005 to review preliminary study recommendations and provide input to the JLUS Working Group and Policy Committee representatives. These meetings, as well as City Council meetings during the winter and spring of 2005 to review the proposed JLUS recommendations, were open to the public.

Background Information 2.0

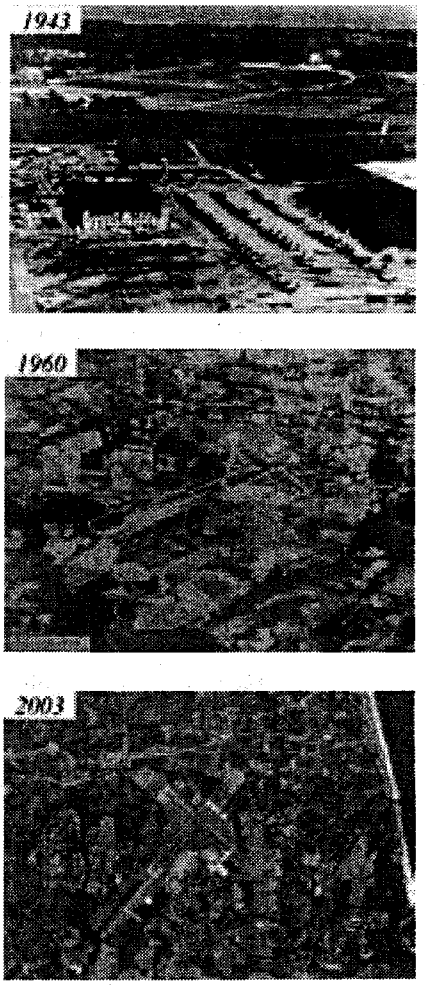
2.1 Chronology of Events

This JLUS represents continuing coordination between the Navy and jurisdictions in the Hampton Roads area in developing sound land use policies which enable the presence of military operations in the area. Below is a brief narrative highlighting development decisions preceding this JLUS planning process which reflects a foundation of dialogue at various levels, including key stakeholders and community interaction.

Large scale development within the vicinity of NAS Oceana began in the City of Virginia Beach more than 30 years ago. Since the dialogue on land use compatibility/development between Virginia Beach and the Navy began in the 70s, development has been proposed and approved within areas the Navy disagrees should be developed. In other cases, the City has modified or rejected development proposals to address the Navy's concerns. Over the years, conflicts have occurred over land use proposals between the two parties. Varying planning and land use policies were adopted by the City to address this problem. The differences between the two parties escalated during the basing decisions for the F/A-18 E/F Super Hornets and new Navy regulations about AICUZ land use compatibilities during 2002 and 2003. This JLUS effort in 2004 is a direct consequence of these differing attitudes towards development in NAS Oceana's AICUZ.

Development around NALF Fentress, on the other hand, has been less intense over the past decades. However, recent development pressures are pushing new residents further into areas surrounding NALF Fentress. The leaders of the City of Chesapeake have included growth management tools into their long-term planning strategies to keep development incompatible with military operations away from the active airfield. This approach also recognizes wetlands and other environmental constraints to development in this area, as well as agricultural and rural area preservation. However, the City is interested in other measures to address future compatibility issues as the community continues to grow.

An entirely different situation exists for Chambers Field. In this case, significant development existed around the base prior to jet aircraft or modern air operations starting at Chambers Field (formerly Naval Air



Development around NAS Oceana over time

Station Norfolk). This development, mostly older residential neighborhoods, is now incompatible with current Navy regulations. Currently, there is little vacant land available for development in Norfolk in the areas adjacent to Chambers Field. Over the years, representatives from the City of Norfolk and Navy have had informal communications, but this JLUS represents the first time both parties have formally addressed this issue.

Community stakeholder groups, particularly in Virginia Beach, have also been part of this dialogue, pushing both the jurisdictions and Navy to address the noise impacts of military operations on the adjacent communities, continuing to expand in geographic scope. Serving as advocates for community health and quality of life, these groups have been active voices in the land use development debates over the years.

A chronology of major events in the evolution of the airfields' development and jurisdiction planning efforts to address compatibility is highlighted below.

- **1918** – Chambers Field commissioned as airfield at Norfolk
- **August 17, 1943** – Oceana commissioned as Naval Auxiliary Air Station
- **October 24, 1951** – Fentress designated a NALF to Oceana
- **April 1, 1952** – Oceana designated a Naval Air Station
- **1954** – NAS Oceana became first naval air facility developed to accommodate jet aircraft
- **January, 1963** - Charter established for the City of Virginia Beach after merger with Princess Anne County
- **November, 1967** – City of Norfolk adopted General Plan
- **July, 1974** – First F-14 aircraft assigned to NAS Oceana
- **October, 1979** – City of Virginia Beach adopted First Comprehensive Plan
- **January, 1985 (Amended August, 1986)** – Second Comprehensive Plan adopted by City of Virginia Beach
- **February 23, 1988** – City of Chesapeake designated lands around NALF Fentress as agricultural use, maintaining compatibility for air operations

- **June 21, 1988** – City of Chesapeake issued Zoning Ordinance Amendment prohibiting major subdivisions in Agricultural District, surrounding NALF Fentress
- **July 24, 1990** – City of Chesapeake adopted Comprehensive Plan
- **October 16, 1990** – Adoption of Fentress Airfield Study and Fentress Overlay District by City of Chesapeake
- **March, 1991** – Third Comprehensive Plan adopted by City of Virginia Beach
- **January, 1992** – City of Norfolk adopted updated General Plan
- **September 21, 1993** – Establishment of Rural Overlay District by City of Chesapeake, designating lands around NALF Fentress in rural district, prohibiting major residential development and extension of public utilities
- **August 23, 1994** – City of Virginia Beach adopted Airport Zoning Program, including an AICUZ ordinance and land use compatibility tables
- **May, 1995** – City of Virginia Beach implemented Agricultural Reserve Program to conserve farmland in AICUZ and southern part of City
- **November, 1997** – Fourth Comprehensive Plan adopted by City of Virginia Beach
- **September 22, 1998** – Amendments approved to Virginia Beach AICUZ Ordinance; noise disclosure included, noise zones renamed, and conditional uses applied to noise zones
- **1998, 1999** – F/A-18 Squadrons arrived at NAS Oceana
- **1999** – Navy published revised AICUZ map for Oceana, Fentress and Chambers Field
- **July, 2002** – Navy released Draft EIS for placement of F/A-18 E/F
- **December, 2002** – CNO released Office of the Chief of Naval Operations Instruction (OPNAVINST) 11010.36B with revised land use compatibility guidelines
- **February, 2003** – Virginia Beach City Council adopted revised land use plan for Transition Area

- **June, 2003** – Navy representatives met with Virginia Beach Planning Department and Planning Commission to discuss new OPNAVINST 11010.36B land use compatibility table
- **September, 2003** – Final Record of Decision (ROD) released on F/A-18 E/F EIS basing
- **December, 2003** – Fifth Comprehensive Plan adopted by City of Virginia Beach
- **March, 2004** – JLUS Committee Working Group conducted orientation meeting with OEA
- **April, 2004** – HRPDC staff developed JLUS Request for Proposal
- **June, 2004** – Consultant selected to conduct JLUS, in coordination with jurisdictions
- **July 1, 2004** – JLUS began

2.2 Economic Impacts of the Installations

NAS Oceana and Chambers Field each have significant impacts on the economic health of the surrounding community. The military and civilian payroll, coupled with spending on goods and services, results in billions of dollars infused into the regional economy.

NAS Oceana, the largest employer in Virginia Beach, had a gross annual payroll of over $750 million and spent another $400 million for goods and services in 2003. In that year, over 12,000 personnel were on the payroll, comprised of nearly 9,800 military and over 2,500 civilian employees. Most of these employees live within the community, infusing additional benefits into the local economy, primarily through spending and spousal employment salaries. When considering the personal impact of the military in the community, the economic benefit exceeds $1 billion annually.

Chambers Field is part of NS Norfolk, which is the largest naval base in the United States with a significant economic contribution in the billions spread throughout the Hampton Roads region. Although ship operations dominate activities at the Station, air operations at Chambers Field represent a major on-going naval activity that contributes substantially to local employment and economic benefits to Norfolk and the other Tidewater communities. In 2003 alone, Chambers Field employed over 5,000 personnel with a payroll of almost $350 million and related goods and services purchases in the millions.

2.3 Military Mission and History

The military presence in the Hampton Roads region is significant, totaling approximately 85,000 active duty service members alone in 2003. When factoring in reservists, retirees, and family members, a total of nearly 232,000 military-associated people reside in the region. Non-military are also dependent on this presence, with nearly 28,000 federal civilian workers employed in the region in 2003.

NAS Oceana

Oceana was originally carved out of 328 acres of swampland in 1940 as an Auxiliary Airfield. Wartime growth pushed its status to a Naval Air Auxiliary Station on August 17, 1943 and by war's end the number of men and aircraft aboard had tripled. In 1952, Oceana was designated a Naval Air Station (NAS) and the Master Jet Base concept was taking shape. (A Master Jet Base is defined by the Navy as a location with permanent basing and homeporting of carrier air groups, and the provision of one or more auxiliary landing fields for their use in concentrated field carrier landing practice.) By 1953, Oceana was an all-weather air station, and by 1957, it was officially designated a Master Jet Base. The longest runways in Hampton Roads and its location within the city of Virginia Beach, Virginia, near the warming currents of the Atlantic Gulf Stream enable Oceana to operate when other airfields cannot. Over the years, Oceana has grown to more than 16 times its original size.

NS Norfolk (Chambers Field)

The land on which Naval Station (NS) Norfolk is located was originally the site of the 1907 Jamestown Exposition. A bill was passed in 1917 for the purchase of 474 acres; it set aside the sum of $1.2 million as payment for the property and an additional $1.6 million for the development of the base, including piers, aviation facilities, storehouses, facilities for fuel and oil storage, a recruit training station, a submarine base and recreation grounds for fleet personnel.

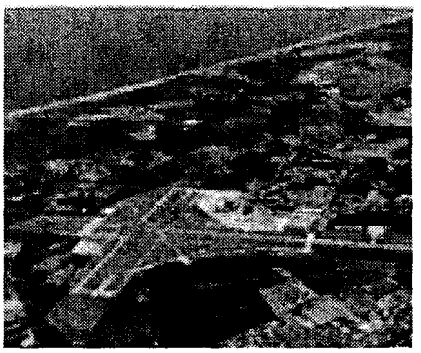
NS Norfolk Chambers Field is the name for the airfield facility formerly belonging to NAS Norfolk. Chambers Field was commissioned in 1918, supporting transport, surveillance, and attack aircraft throughout its history. The field consists of two heliports, six helipads, and one east-west runway.

NALF Fentress

Both Naval Auxiliary Landing Field (NALF) Fentress in Chesapeake and Chambers Field in Norfolk are under the command of NAS Oceana. The Fentress landing field was established as a part of NAS Oceana during World War II and has been used since then as a training facility for aircraft stationed at both Oceana and Norfolk. The field was designated a NALF to Oceana in October, 1951.

2.4 Current and Future Military Operations

NAS Oceana



NAS Oceana has grown to become one of the largest and most advanced air stations in the world with an area of 5,331 acres and an additional 3,680 acres in restrictive easements. Its runways, measuring 8,000 feet and 12,000 feet, are designed for high-performance aircraft. NAS Oceana's primary mission is to train and deploy the Navy's East Coast Strike/ Fighter squadrons—the F-14 Tomcats and the F/A-18 Hornets and Super Hornets. Pilots stationed at NAS Oceana fly more than 200,000 training operations each year.

The airspace under control tower jurisdiction and immediately adjacent to the runways is defined by the Federal Aviation Administration (FAA) as "Class D" airspace. At NAS Oceana, "Class D" is that airspace from the surface to 2,500 feet within a 4.3 nautical mile radius from the center of the airport. The pattern altitude at NAS Oceana is 1,000 feet. Flight operations that are conducted into and out of NAS Oceana as part of the typical training syllabus for flight crews include departures, arrivals, touch and go landings, practice radar approaches, flights to and from NALF Fentress, and flights to and from offshore training areas. Flights operating within NAS Oceana's Class D airspace may be routed anywhere within the 4.3 mile radius at an altitude above 1,000 feet, or lower when necessary for takeoff or landing.

Aircraft loading is currently changing at NAS Oceana. The Super Hornet transition now underway is based on the results of the East Coast Basing strategy of the new airframe. Due to this transition, the overall number of aircraft based at NAS Oceana is projected to decrease in the future, with a different mix of aircraft from today's current state. Current and projected aircraft based at NAS Oceana are provided in Table 2.1.

Table 2.1 **Current and Projected Aircraft Loading at NAS Oceana**

Aircraft Type	Wing Type	Current (2004)	Projected (2012)
F-14	Fixed Wing	63	0
F-18 C/D	Fixed Wing	145	85
F-18 E/F	Fixed Wing	7	120
F-18 A	Fixed Wing	12	12
C-40	Fixed Wing	0	4
Other Aircraft		14	14
TOTAL		241	235

Source: Mid-Atlantic Aviation Regional Shore Infrastructure Plan, NAVFAC Atlantic 2004

NS Norfolk (Chambers Field)

Today, Naval Station Norfolk occupies about 4,300 acres of Hampton Roads real estate on a peninsula known as Sewells Point. Naval Air Station Oceana, Air Detachment Norfolk, maintains and operates airfield and heliport facilities at Chambers Field on the Station, repairs and maintains airfield Ground Electronic Equipment, provides logistical support to joint commanders and Naval Air Logistics Office, and operates the UC-12B/M and RC-12M Fleet Replacement School.

Chambers Field consists of two heliports, four helipads, and an 8,000-foot runway. Its current inventory includes: the E-2 Hawkeye, the C-9 Skytrain, the C-12 Super King Air, the C-2 Greyhound, the CH-46 Sea Knight, the CH-53 Sea Stallion, the CH-53E Super Stallion, the H-3 Sea King, and the H-60 Seahawk. Additionally, Chambers Field is home to the Air Mobility Command (AMC) Passenger and Air Cargo Terminal located on the south side of the airfield. The AMC Terminal processes 12,000 passengers and more than 800 tons of cargo each month for military missions worldwide. Pilots perform approximately 100,000 flight operations annually at Chambers Field. Current and projected aircraft based at NS Norfolk (Chambers Field) are provided in Table 2.2.

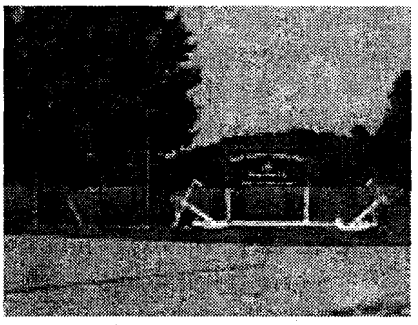
A transition in airframes is also underway at Chambers Field, with increases in the number of rotary wing (helicopter) aircraft, specifically, the H-60S. Additionally, the C-9s are projected to move from Chambers Field to NAS Oceana in the near future. The changes in rotary airframes will result in no modifications of Accident Potential Zones (APZs) and noise contours due to the presence of fixed wing contours dominating the airfield and surrounding environs.

Table 2.2 **Current and Projected Aircraft Loading at Chambers Field**

Aircraft Type	Wing Type	Current (2004)	Projected (2012)
H-3	Rotary Wing	16	0
H-60S	Rotary Wing	15	92
H-46 (USN)	Rotary Wing	11	0
H-46 (USMC)	Rotary Wing	12	12
MH-53	Rotary Wing	15	15
HH-60H	Rotary Wing	8	8
E-2C	Fixed Wing	36	32
C-2A	Fixed Wing	17	17
C-9	Fixed Wing	5	0
C-12	Fixed Wing	5	3
TOTAL		140	179

Source: Mid-Atlantic Aviation Regional Shore Infrastructure Plan, NAVFAC Atlantic 2004

NALF Fentress



NALF Fentress is located approximately seven miles southwest of NAS Oceana. It comprises 2,560 acres, with an additional 8,780 acres in restrictive easements. NALF Fentress has one 8,000 foot runway equipped to simulate an aircraft carrier flight deck. It is used by squadrons stationed at NAS Oceana or NS Norfolk Chambers Field for Field Carrier Landing Practice (FCLP) operations. These operations are intended to familiarize the pilot with carrier landings and must be conducted under both daytime and nighttime operational conditions. Prior to deployments, the local community may experience increased operations, as pilots complete training exercises. Pilots perform approximately 100,000 operations at NALF Fentress annually. The pattern altitude at NALF Fentress is 800 feet.

2.5 Regional Demographics and Growth Trends

Much of the Hampton Roads region has experienced significant growth over the past decades, with the current trend anticipated to continue into the future (See Tables 2.3 and 2.4). Residential growth has fueled the demand for new services, resulting in new commercial development primarily in Virginia Beach and Chesapeake. Future growth in these jurisdictions is projected to be significant, with both cities expected to grow over 20 percent in the next 20 years. The level of development in Norfolk, on the other hand, has remained relatively steady, with much of the neighborhood surrounding Chambers Field at NS Norfolk already developed. Future trends indicate a modest increase in population in Norfolk over the next 20 years.

NAS Oceana

Land surrounding NAS Oceana is largely developed, with high concentrations of residential uses around much of the installation and more intensive commercial development to the north-northeast of the airfield. Over 140,000 people, which represents approximately 33% of the City of Virginia Beach's population, live in areas affected by military operations, whether noise or safety related (See Table 2.5). According to the 2000 Census, much of the housing stock is owner-occupied, with a low vacancy rate around 5%.

Virginia Beach is expected to continue growing over the next 20 years, with much of the opportunity for new growth occurring either through redevelopment infill or new development in the Princess Anne Corridor. The comprehensive planning policy for the jurisdiction notes strategic areas for growth throughout the jurisdiction, half of which lie within the area affected by air operations at Oceana.

NS Norfolk (Chambers Field)

Almost 8,000 people (approximately 3% of Norfolk's population) reside in the noise zones and APZs of Chambers Field (See Table 2.5). Approximately 8% of the housing units in that area were vacant, according to the 2000 census. The area surrounding the airfield is already developed, with utilities and infrastructure provided. Future growth in this area would be almost entirely in the form of infill redevelopment.

NALF Fentress

Over 11,000 people, (approximately 5% of the City population) currently live in the Chesapeake AICUZ (See Table 2.5). Although growth in the City at large has been much greater, recent growth in the census tract around NALF Fentress has been steady, hovering around 3% since 2000. This translates into a net gain of approximately 30 new residential units a year over the entire census tract. Much of the land surrounding NALF Fentress is zoned agricultural or conservation, helping maintain the low rate of residential growth within this area.

Table 2.3 **Census Variables**

Census 2000 Variables	Chesapeake	Norfolk	Virginia Beach
Total Population	199,184	234,403	425,257
Total Households	69,900	86,210	150,325
Total Families	64,158	51,915	110,953
Total Housing Units	72,672	94,416	162,277
Average Household Size	2.79	2.45	2.70
Average Family Size	3.17	3.07	3.14
Median Household Income	$50,743	$31,815	$48,442
Per Capita Income	$20,949	$17,372	$22,365

Source: 2000 U.S. Census

Table 2.4 **Projected Population 2026**

	Total Population 2000	Estimated Population 2003	Projected Population 2026	% Change 2003– 2026
Chesapeake	199,184	207,199	264,900	27.8
Norfolk	234,403	241,727	243,724	8.3
Virginia Beach	425,257	439,467	534,278	21.6

Source: 2000 U.S. Census

Table 2.5 **Estimated Population in Hampton Roads AICUZ Zones (excluding military population living on base)**

AICUZ Zones	Estimated Chesapeake Population*	Estimated Norfolk Population*	Estimated Virginia Beach Population*
65-70 db	7,200	3,500	48,000
70-75 db	3,000	1,600	41,800
> 75 db	1,200	2,600	50,700
Total	**11,400**	**7,700**	**140,500**

* *Calculated as proportion of U.S. Census Block 2003 population (estimates compiled by ESRI Business Information Solutions) within AICUZ boundaries for each jurisdiction.*

Technical Information 3.0

3.1 Air Installations Compatible Use Zones (AICUZ) Program

Overview

All airports attract development. People who work at the airport want to live nearby, and businesses are established to cater to the airport and its employees. As development encroaches upon the airfield, more people experience noise and other impacts associated with aircraft operations.

The Noise Control Act of 1972 declared that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare. This act also excluded military weapons or equipment that are designed for combat use. In response to the Noise Control Act of 1972, DoD established the Air Installations Compatible Use Zones (AICUZ) Program to balance the need for aircraft operations and community concerns. The goal of the AICUZ Program is to protect the health, safety, and welfare of those living near a military airport while preserving its defense-flying mission. AICUZ guidelines define zones of high noise and accident potential and recommend uses compatible within these zones. Local land use agencies are encouraged to adopt these guidelines.

Noise Zones

Under the AICUZ Program, DoD provides noise zones as a planning tool for local planning agencies. DoD measures noise exposure using the day-night average sound levels (DNL). The DNL noise metric averages noise events that occur over a 24-hour period. Aircraft operations conducted at night (10:00 p.m. to 7:00 a.m.) are weighted because people are more sensitive to noise during normal sleeping hours when ambient noise levels are lower. The DNL contours on the AICUZ maps reflect the noise exposure in the surrounding communities and the fact that noise impacts diminish with distance from the airfield. DNL contours do not reflect the noise of individual aircraft events. DNL contours are used to assess average long-term noise exposure rather than the impact of a single event.

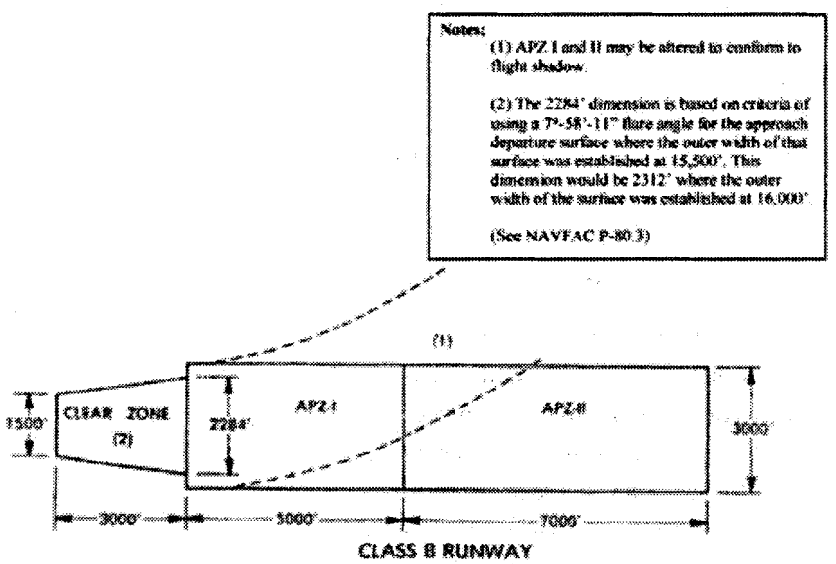
Accident Potential Zones

DoD also provides Accident Potential Zones (APZs) around its airfields as a planning tool to local land use agencies. APZs are areas where an aircraft accident is likely to occur if one occurs. They do not reflect the probability of an accident. APZs follow arrival, departure, and pattern flight tracks and are based upon analysis of historical data. The AICUZ map defines three APZs - the Clear Zone, APZ 1, and APZ 2. The Clear Zone extends 3,000 feet beyond the runway and has the highest potential for accidents. APZ 1 extends 5,000 feet beyond the Clear Zone, and APZ 2 extends 7,000 feet beyond APZ 1. If an accident is to occur, it is more likely to occur in APZ 1 than APZ 2 and more likely to occur in the Clear Zone than in either APZ 1 or APZ 2.

As stated above, APZs follow arrival, departure, and pattern flight tracks. APZs are not "roadways" in the sky. Weather conditions, wind, pilot technique, and other air traffic will typically cause some lateral deviation within the landing pattern around an airport.

Certain land uses are not compatible with military flight operations. Modifications to proposed land development near the airfield can help

Figure 3.1 Accident Potential Zone Dimensions (APZs)



Source: OPNAV INSTRUCTION 11010.36B, December 2002

resolve tension between the community and the military. In general, DoD recommends that noise-sensitive uses (i.e., houses, churches, amphitheaters, etc.) be placed outside high noise zones and that people-intensive uses (i.e., regional shopping malls, theaters, etc.) not be placed in APZs. These DoD recommendations are intended to serve only as guidelines. Local governments alone are responsible for regulating land use.

Navy Regulations

The Navy sets specific recommendations for land uses within the various noise and Accident Potential Zones identified in the AICUZ Program. This guidance is contained in OPNAV INSTRUCTION 11010.36B issued by the Chief of Naval Operations (CNO) in 2002, which is used across the country to set compatibility standards around Navy air installations. The suggested land use compatibility charts for noise zones and APZs contained in OPNAVINST 11010.36B are provided in Appendix 1. This instruction updates earlier instructions in effect prior to 2002.

Figure 3.2 Accident Potential and Noise Levels - Chambers Field

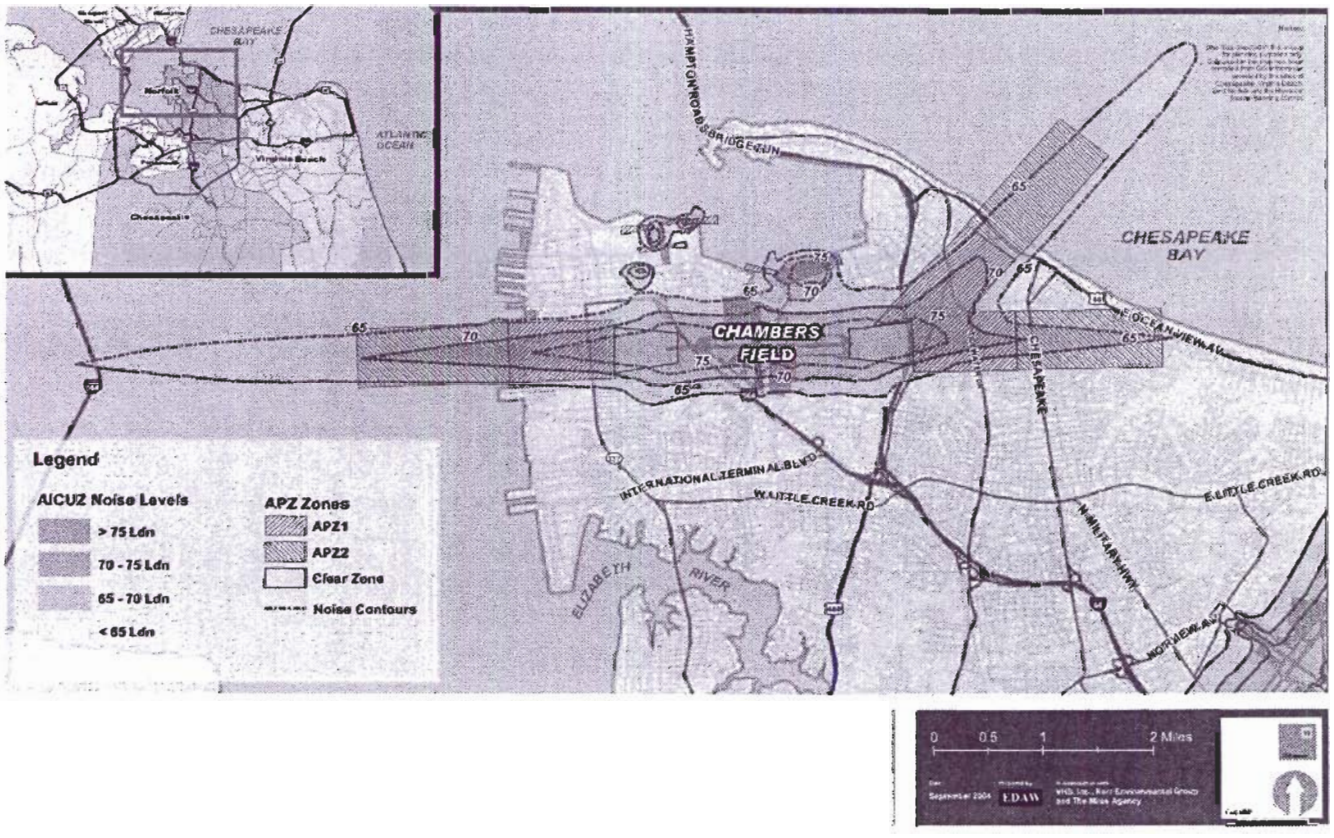
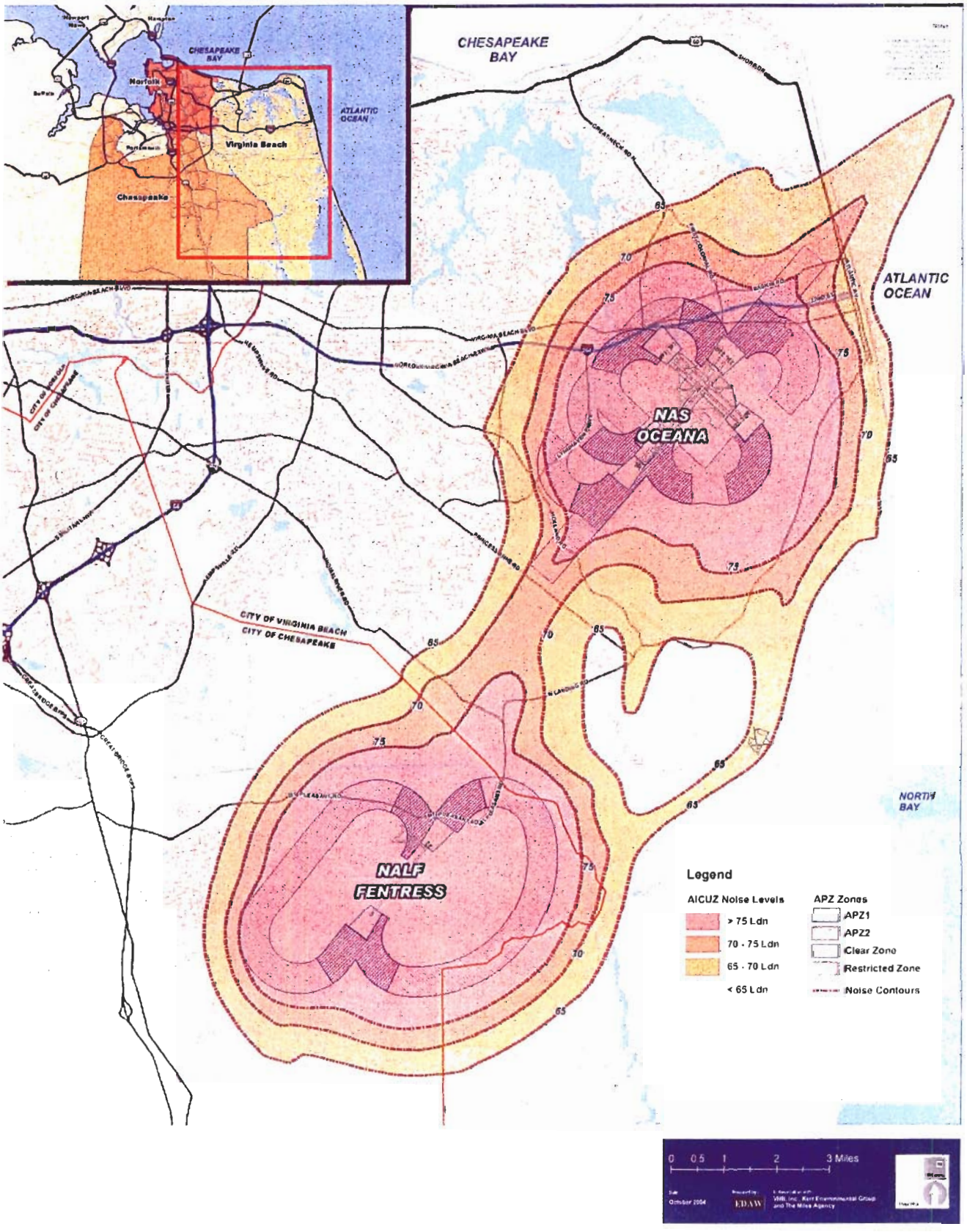


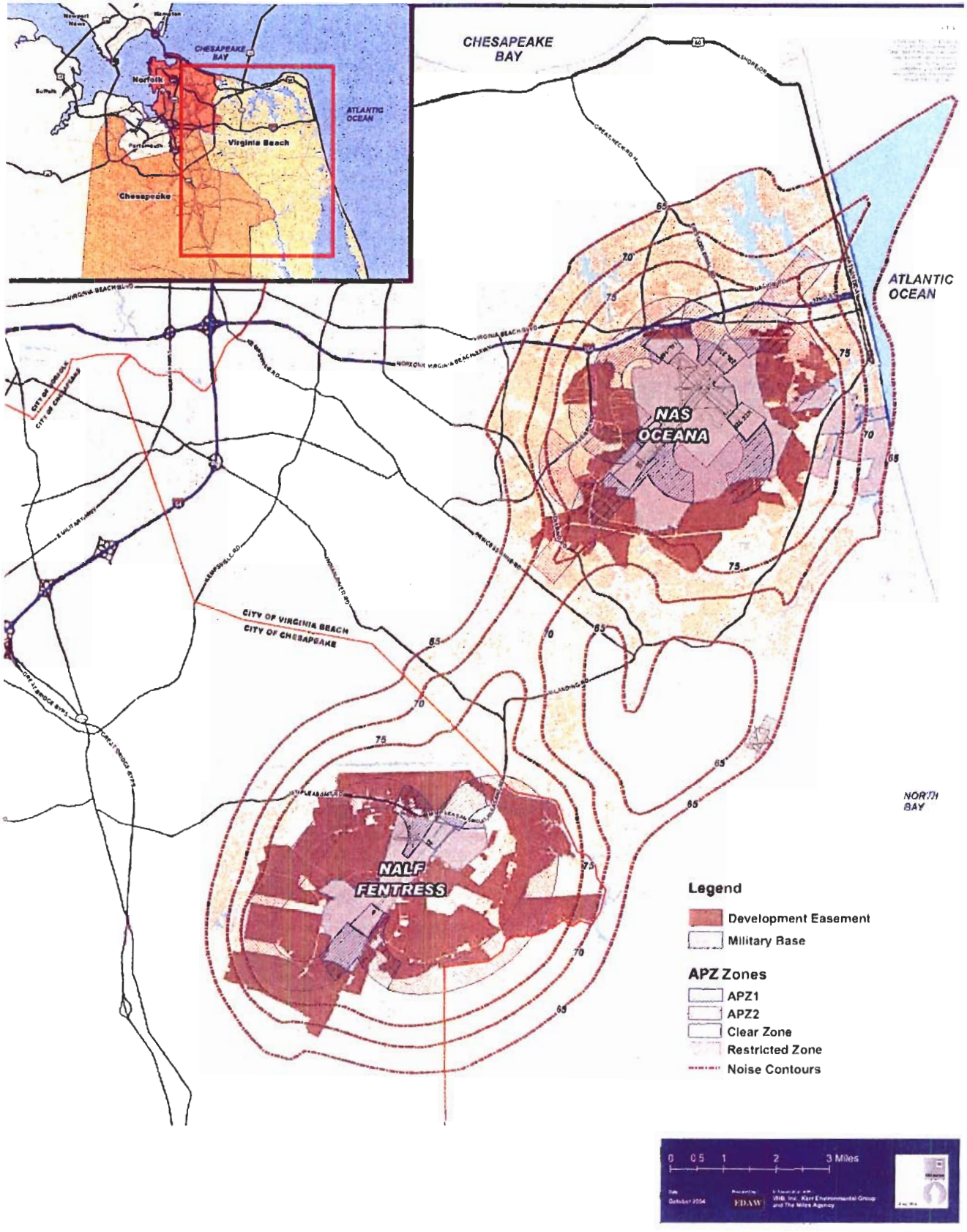
Figure 3.3 Accident Potential and Noise Levels - NAS Oceana & NALF Fentress



The most recent AICUZ study the Navy drafted for its Hampton Roads airfields was in 1999. As directed by the JLUS Policy Committee, the maps generated as part as the 1999 AICUZ study are the maps used for planning purposes in this JLUS planning effort. These maps, shown in Figures 3.2 and 3.3, depict the noise contours and APZs for each of the three Navy air installations included in this study.

To further assist in buffering impacts related to military operations, the Navy has purchased restrictive easements around both Oceana and Fentress. The easements were purchased from individual landowners and conveyed to the Navy the right to restrict certain activities on the property that would be incompatible with airfield operations, such as residential development. These easements were acquired over a 12-year period after 1972 when the initial AICUZ for Oceana and Fentress was established. Congress funded the purchase of these easements through the Navy's military construction (MILCON) program. A total of 3,681 acres of restrictive easements were purchased around NAS Oceana and 8,780 acres were purchased around NALF Fentress (See Figure 3.4).

Figure 3.4 Restrictive Easements around NAS Oceana & NALF Fentress



3.2 Environmental Resources

One method of reducing to some degree conflicts between the operational requirements of the Navy and future development within the JLUS jurisdictions is to identify methods and/or opportunities for conservation of natural areas, particularly within the AICUZ. As part of this study, existing conservation lands were identified in the region that currently provide natural "buffers" from air operations, as well as lands that have the potential for future designation for this purpose. These lands were identified in a Geographic Information System (GIS) mapping format using data available from Federal, state or local sources. The analysis was completed for lands surrounding NAS Oceana and NALF Fentress only since Chambers Field is in an existing urban area with little undeveloped natural areas remaining near NS Norfolk (that are not already designated as City parkland or open space).

The natural resources data available at a scale sufficient to cover the Virginia Beach and Chesapeake study area required use of planning-level documentation, rather than precise parcel-by-parcel information. The data sources utilized included the State Scenic Rivers, 100-year flood-plain maps (FEMA), 100 foot Resource Protection Area buffers (Cities of Chesapeake, Norfolk and Virginia Beach), 50 foot Southern Watersheds Management Ordinance buffers (City of Virginia Beach) and the National Wetland Inventory (U.S. Fish and Wildlife Service).

The existing resources mapped included the following environmental resources:

Environmentally Sensitive Areas:

- Water bodies
- Floodplains
- Wetlands

Parks and Open Space:

- Parkland
- Golf courses
- City-owned public open space
- False Cape Sate Park
- First Landing State Park
- Northwest River Natural Area Preserve

Protected Lands:

- DoD/military lands
- DoD easements

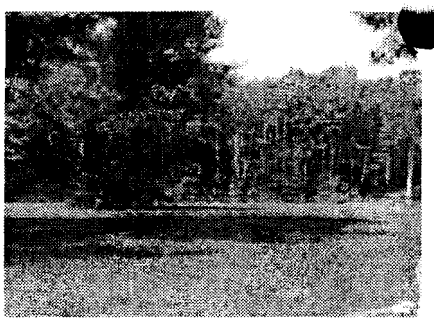
- Wildlife refuges (managed by U.S. Fish & Wildlife Service)
- Wildlife Management Areas (managed by Virginia Department of Game and Inland Fisheries)
- Open space easements (purchased by or donated to the Virginia Outdoors Foundation)
- Privately conserved land (purchased by or donated to the Nature Conservancy)
- Preserved farmland (designated as part of the City of Virginia Beach's Agricultural Reserve Program)

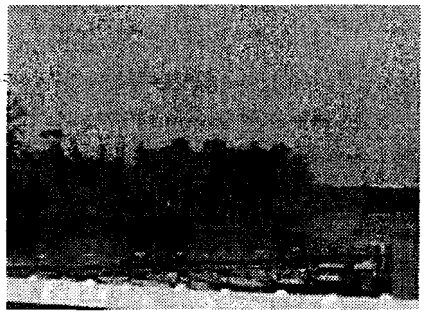
The overwhelming majority of existing conservation and open space lands lie within the 100 year floodplain of the dominant water bodies within the study area: Back Bay, North Landing River, Northwest River, the Elizabeth River, and their dominant tributaries. Properties within the Agricultural Reserve Program are often located immediately outside the 100 year floodplain, thereby providing buffers to the floodplains and occasional corridors between them. Opportunities for conservation were examined that could build upon this existing "backbone" of conservation and land stewardship.

An ongoing, regional study, the Southern Watershed Area Management Program (SWAMP) was initiated formally in 1994 by the Cities of Chesapeake and Virginia Beach, in partnership with HRPDC and the Virginia Coastal Program with the goal: "To protect and enhance the natural resources, sensitive lands and water supplies of the Southern Watersheds of Chesapeake and Virginia Beach."

The Southern Watersheds include Back Bay, Northwest River and the North Landing River. The SWAMP has achieved many successes including the incorporation of elements of SWAMP in the recent Comprehensive Plan approved by Virginia Beach and the Comprehensive Plan update currently underway in Chesapeake. Other achievements include the adoption of an Open Space and Agricultural Preservation Program in Chesapeake, and the development of the first Conservation (low-impact residential) Subdivision in the Southern Watershed Area (the "Preserve on the Elizabeth") in Chesapeake. Both Cities are also in the process of revising their preservation and conservation zoning district.

An additional outcome of SWAMP was the completion of the Multiple Benefits Conservation Program Memorandum of Agreement in 2002, signed by the Cities of Chesapeake and Virginia Beach, along with several state and Federal agencies. The Agreement is intended to encourage the achievement of multiple ecological benefits when sites are being





Intercoastal Waterway and wetlands in Chesapeake

considered for restoration or preservation in the Southern Watershed Area, including compensation for impacts to jurisdictional wetlands. A Conservation Corridor system was developed for the Southern Watershed Area (SWA) as part of the Multiple Benefits Conservation Program. This corridor roughly corresponds to the 100 year floodplain surrounding the three major water bodies in the SWA. The Conservation Corridor system was intended to achieve three goals: linkages of existing protected areas, protection of critical habitat (67 plants, 22 animal and 19 community types rare in the Commonwealth are found in the SWA), and formation of riparian buffers. Currently, the use for this Conservation Corridor system is to identify restoration and preservation sites within the SWA that provide multiple benefits, chiefly for wetland compensation.

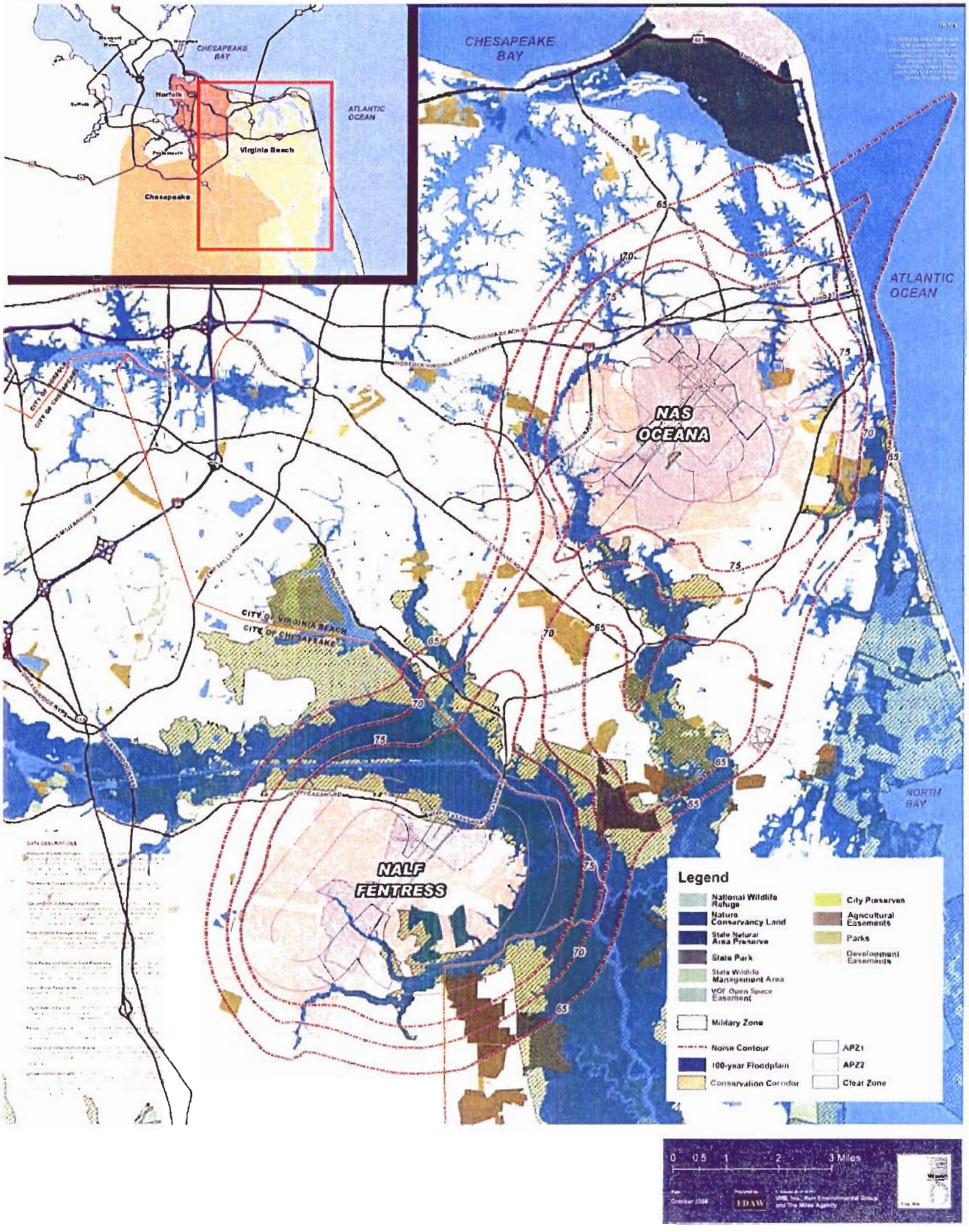
As a consequence of the Southern Watershed Area being located largely within the JLUS area, it is recommended that potential conservation opportunities be researched within the Conservation Corridor system to learn whether the goals of the JLUS can be benefited (See Figure 3.5). Mechanisms for the preservation and enhancement of such properties (acquisition, easements, etc.) will also need to be researched as there are no monies currently available for such efforts.

The Floodplain Regulations of the City of Virginia Beach also limit development within this natural resource. Perpetual protection of lands within the Conservation Corridor system or any other area within the JLUS area will need to consider natural limitations to development based upon the 100 year floodplain.

It is also recommended that the Agricultural Reserve Program (ARP) be evaluated to determine whether a criterion can be developed that takes into account whether the lands of future participants provide benefits related to goals defined in the JLUS. ARP lands are already providing protection to 100 year floodplains as well as providing buffers to the floodplain and yielding conservation corridors between various 100 year floodplains. The result of this future effort would be similar to the benefits accrued to NALF Fentress as a consequence of the Open Space and Agricultural Preservation Program in Chesapeake.

In summary, conservation opportunities may exist within the context of building incrementally on existing programs and agreements within and between the Cities of Chesapeake and Virginia Beach. Such opportunities could further the protection of the 100 year floodplains of Back Bay, Northwest River, North Landing River and their major tributaries, and aid in maintaining agriculture as a viable industry in the Southern Watershed Area.

Figure 3.5 Conservation Areas around NAS Oceana & NALF Fentress



3.3 Transportation/Infrastructure

3.3.1 Existing Conditions

NAS Oceana

The general location of the airfield and its associated activity areas within the urbanized areas of Virginia Beach and Chesapeake results in a multitude of existing traffic and transportation conditions. Interstate-264 (I-264), which connects the oceanfront to Interstate-64 (I-64) and Downtown Norfolk, bisects the city in the east-west direction and traverses just north of NAS Oceana. I-264 serves Oceana from several interchanges at Lynnhaven Parkway, First Colonial Road and Birdneck Road.

The central location of NAS Oceana within the city of Virginia Beach creates a large, non-traversable, secure area that requires several perimeter routes to provide access to southern areas of the city. There have been several recent improvements to perimeter corridors connecting to the interstate that will improve base access and reduce congestion for vehicles traveling to the growing areas in southeast Virginia Beach.

Along the west perimeter, the Virginia Department of Transportation (VDOT) is completing work on the improvements of London Bridge Road from Virginia Beach Boulevard to Dam Neck Road. These improvements will increase capacity and safety by improving the roadway from a two-lane rural roadway to a four-lane divided roadway. Along the northeast perimeter, improvements on Oceana Boulevard have also been recently completed from Virginia Beach Boulevard to General Booth Boulevard and provide the same increase in capacity/safety for through traffic, as well as traffic accessing the base.

Princess Anne Road, Dam Neck Road and General Booth Boulevard provide connectivity to the base from southern Virginia Beach as well as from Chesapeake. The latter two facilities have adequate existing capacity and, if required, potential for expansion to handle projected future traffic growth in the area. Sections of Princess Anne Road require widening in the future to meet current and projected traffic demands.

Chambers Field

Chambers Field is located on NS Norfolk, in the northern part of the City of Norfolk. The area around the base is a densely developed, mature urban environment with major roadway corridors mixed with local street systems. The existing systems mainly experience congestion during

peak hour events generated by base traffic. In order to offset impacts to the local system, there are multiple access points to the base that are frequently affected by security requirements. Interstate-564, Interstate-64, Hampton Boulevard and International Terminal Boulevard are the major transportation corridors in vicinity of the base. These corridors provide the main access and capacity for the large amount of traffic generated by the base. Various methods of transit, including use of HOV lanes, buses and ride share programs, are currently in use to mitigate impacts of traffic on the roadway network.

NALF Fentress

NALF Fentress is located in Chesapeake along its northern border with Virginia Beach. The surrounding area is generally rural with residential development generating the majority of traffic in the area. Mount Pleasant Road, a two and four lane rural arterial, serves as the major east/west corridor in the area. Also bracketing the area in the north/south directions are Princess Anne Road and Route 168, which serves the Outer Banks of North Carolina. Rural secondary roadways in the area are generally two-lane facilities with minimal shoulders and sharp curves creating low safety conditions.

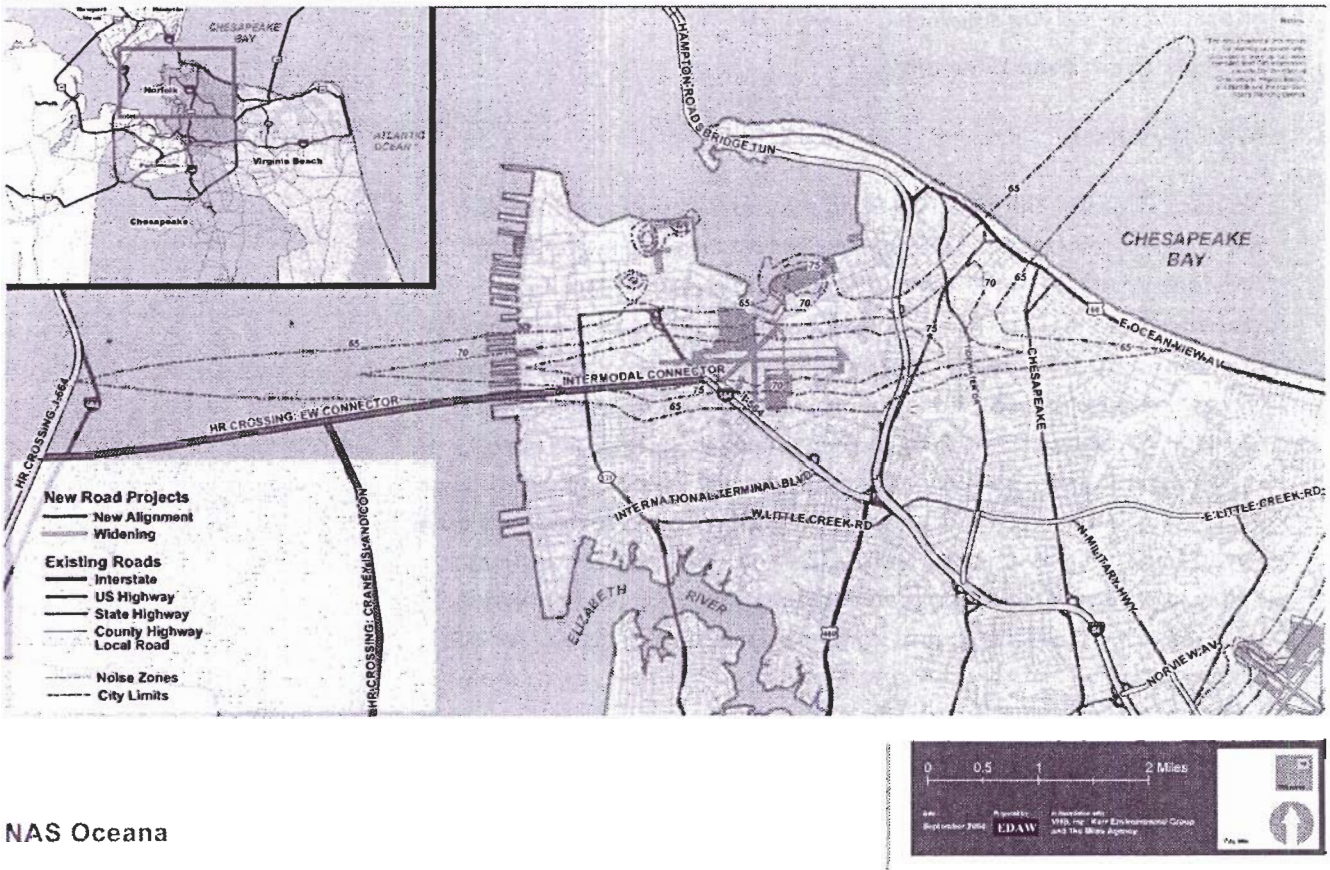
3.3.2 Future Improvements

Chambers Field

Because of the developed urban nature of the area, no significant improvements beyond the Third Hampton Roads Crossing are planned except those that will be defined by redevelopment activities. The Third Crossing is a regional project providing additional connections between I-564 at the Naval Base and Interstate 664 (I-664) in Suffolk and on the Peninsula and Route 164 in Portsmouth (see Figure 3.6). The project includes tunnel crossings, multiple interchanges, and a mass transit component, taking more than ten years to complete with costs in excess of three billion dollars. The project will improve access to the base and surrounding communities.

In the more immediate term, a new highway/rail underpass will be constructed on Hampton Boulevard in the area of Greenbrier Avenue. Work on this project to eliminate travel conflicts between cars and trains serving the adjacent international port is scheduled for 2007.

Figure 3.6 Planned Transportation Improvements around Chambers Field



NAS Oceana

Future planned improvements around NAS Oceana include the construction of the Southeastern Parkway and Greenbelt connecting I-64 in Chesapeake to I-264 just northeast of the base in Virginia Beach (See Figure 3.7). This is the most significant improvement for the area as the limited access roadway will improve local traffic and provide an alternative to I-264 for traffic heading toward the oceanfront and the base. Several access points are planned near the base at Dam Neck Road and Oceana Boulevard. In addition, other planned improvements include reconstruction of the Lynnhaven Parkway interchange with I-264 and the widening of First Colonial Road between Virginia Beach Boulevard and the I-264 interchange. A future extension of Nimmo Parkway to North Landing Road will also improve circulation in the area and provide an additional access point for future growth in south Virginia Beach.

Although not directly adjacent to the base, improvements are planned in the southern part of Virginia Beach designated as the Princess Anne or Transition Area. This area has recently undergone a planning charrette to define development requirements in anticipation of the growth. Improvements in the area include:

- Sandbridge Road Widening and Safety Improvements
- Seaboard Road Improvements
- Indian River Road Widening

NALF Fentress

Similar to Oceana, the proposed Southeastern Parkway and Greenbelt will pass Fentress north of the existing Mount Pleasant Road. It will provide interstate-type access to this area and accommodate recent growth along the corridor and adjacent connecting routes. Because of its proximity to the Virginia Beach Transition Area, the secondary roadways around Fentress will see similar improvements by developers to gain access to developable land near the new interstate facility. As part of these improvements, the City of Chesapeake has identified Route 17 as a major priority to serve areas of south Chesapeake and provide an alternative to Route 168 for access to North Carolina. This roadway is tied to the Southeastern Parkway and Greenbelt by an agreement between the two cities and VDOT to support both projects to ensure success for both localities. Significant steps are underway by both cities to plan land use around these growth corridors to ensure measured growth and maximize the potential improvements.

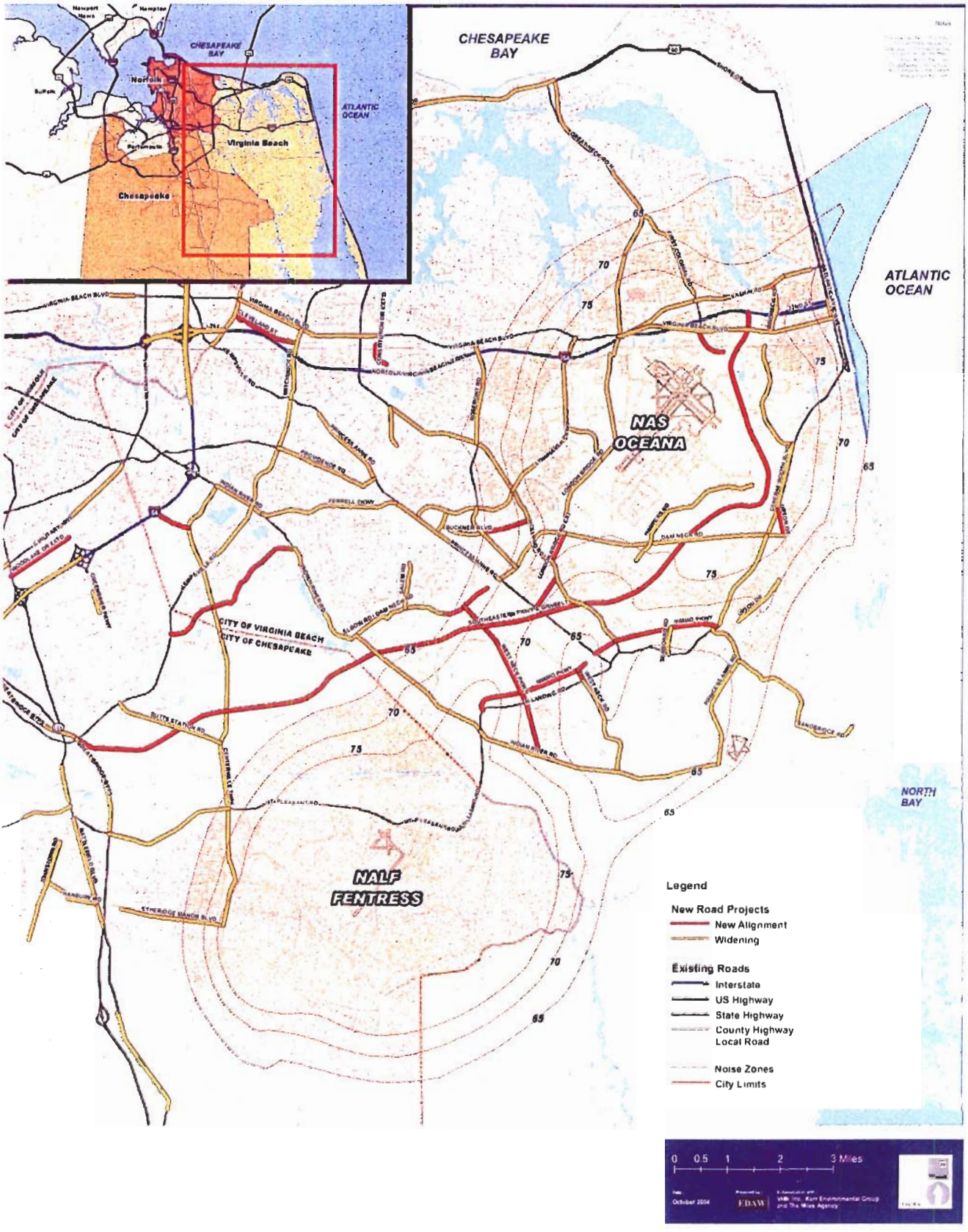
3.3.3 Summary

Improvements to the transportation networks around NAS Oceana and NALF Fentress will have noticeable effects in the near and long-term. In the near-term, improvements are designed and projected to decrease congestion on collector and local roads within the study area, increasing access to key destinations. Some improvements will result in alternatives to current traffic patterns on both major arterials and collectors within the vicinity of the airfields.

Long-term impacts of the planned improvements are still unknown. Predicted effects will be an increased level of access for new development in areas surrounding NAS Oceana and NALF Fentress. The development of new roadways will inevitably provide improved and more convenient access to lands previously not conducive for development because of a lack of infrastructure. However to be approved, new development will need to be consistent with the adopted Comprehensive Plan policies of both surrounding jurisdictions.

The only major transportation improvements planned near NS Norfolk and Chambers Field are the Third Crossing and Hampton Boulevard

Figure 3.7 Planned Transportation Improvements around NAS Oceana & NALF Fentress



underpass at Greenbrier Avenue, which will have minimal effects, if any, on land uses in the AICUZ.

3.4 Existing Land Uses

The following analysis assesses the compatibility of existing civilian land uses around the three Navy airfields. When compatible, land uses can exist next to each other without causing interference or exposing people to risk or nuisance. In the JLUS context, the following land uses are generally deemed inconsistent when near military aircraft operations:

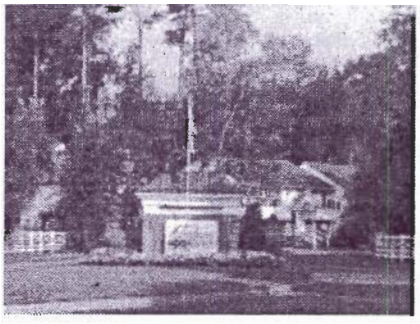
- uses that concentrate people in a compact area (certain residential densities, schools, churches, hospitals)
- vertical uses that encroach on air space (communications towers)
- uses that may draw birds/animals near airfields creating a strike hazard for aircraft (retention ponds)
- uses that may interfere with radio frequency
- uses that throw off excessive lighting and may impair a pilot's vision
- uses that throw off smoke, dust, and steam and may impair a pilot's vision

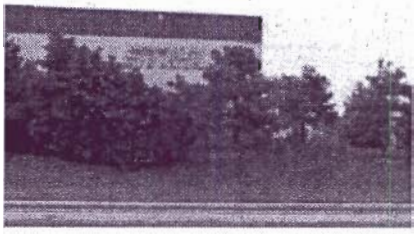
Land use types used for this JLUS analysis were based on the Standard Land Use Coding Manual (SLUCM), which was used to create a common basis for land use analysis across the three jurisdictions within the study. This analysis evaluated the existing land use within the AICUZ noise contours surrounding the three Navy airfields, as established by the 1999 AICUZ map.

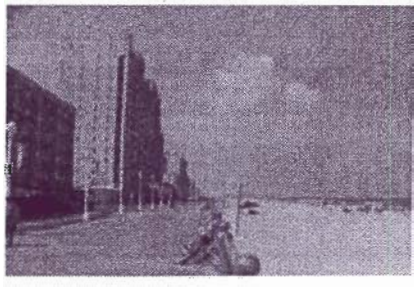
3.4.1 NAS Oceana

The area within the noise zones around NAS Oceana is dominated by Residential uses, Military uses, and Undeveloped/Vacant land. These categories combined constitute over half of the lands within the affected area. Residential (including single and multi-family units) is approximately 26% of total land use within the 1999 AICUZ noise contours (See Table 3.1).

Land use compatibility is an obvious concern around NAS Oceana, as evidenced by the number of existing acres in residential use. Almost 12,000 acres are in residential use within noise contours above 65 DNL. Approximately 3,000 acres are in the highest Noise Zone above 75 DNL (See Figure 3.8).







Existing land uses in Virginia Beach AICUZ

Table 3.1 **Existing Land Use around NAS Oceana (City of Virginia Beach)**

Land Use Type	Acres in Noise Zone (LDN)				% of Total AICUZ Acres*
	65-70	70-75	+ 75	Total	
Rural Residential	98	127	134	359	0.8%
Residential	5,318	3,556	3,005	11,879	25.5%
Agricultural Use	2,136	1,016	1,080	4,232	9.1%
Commercial Office	53	95	463	611	1.3%
Commercial Retail	432	281	1,005	1,718	3.7%
Industrial	45	38	626	708	1.5%
Institutional / Public / Semi-Public	1,136	965	676	2,777	6.0%
Military Base	661	291	5,683	6,634	14.2%
Public Open Space	578	322	223	1,123	2.4%
Forest and Other Natural Areas	1,608	1,134	1,285	4,027	8.6%
Roads & Transportation	1,378	1,024	1,391	3,793	8.1%
Undeveloped / Vacant	1,923	1,603	3,146	6,672	14.3%
Water	1,218	492	419	2,129	4.6%
TOTALS	**16,583**	**10,945**	**19,134**	**46,663**	**100.0%**

Source: EDAW, City of Virginia Beach Planning Dept., 2004

** Totals calculated within jurisdiction only*

3.4.2 NALF Fentress

The land uses within the noise zones around NALF Fentress are dominated by open space and agriculture. Over 70% of the land uses in the AICUZ are in these two categories, with Rural Residential comprising the next highest percentage, approximately 12% of the land area (See Table 3.2).

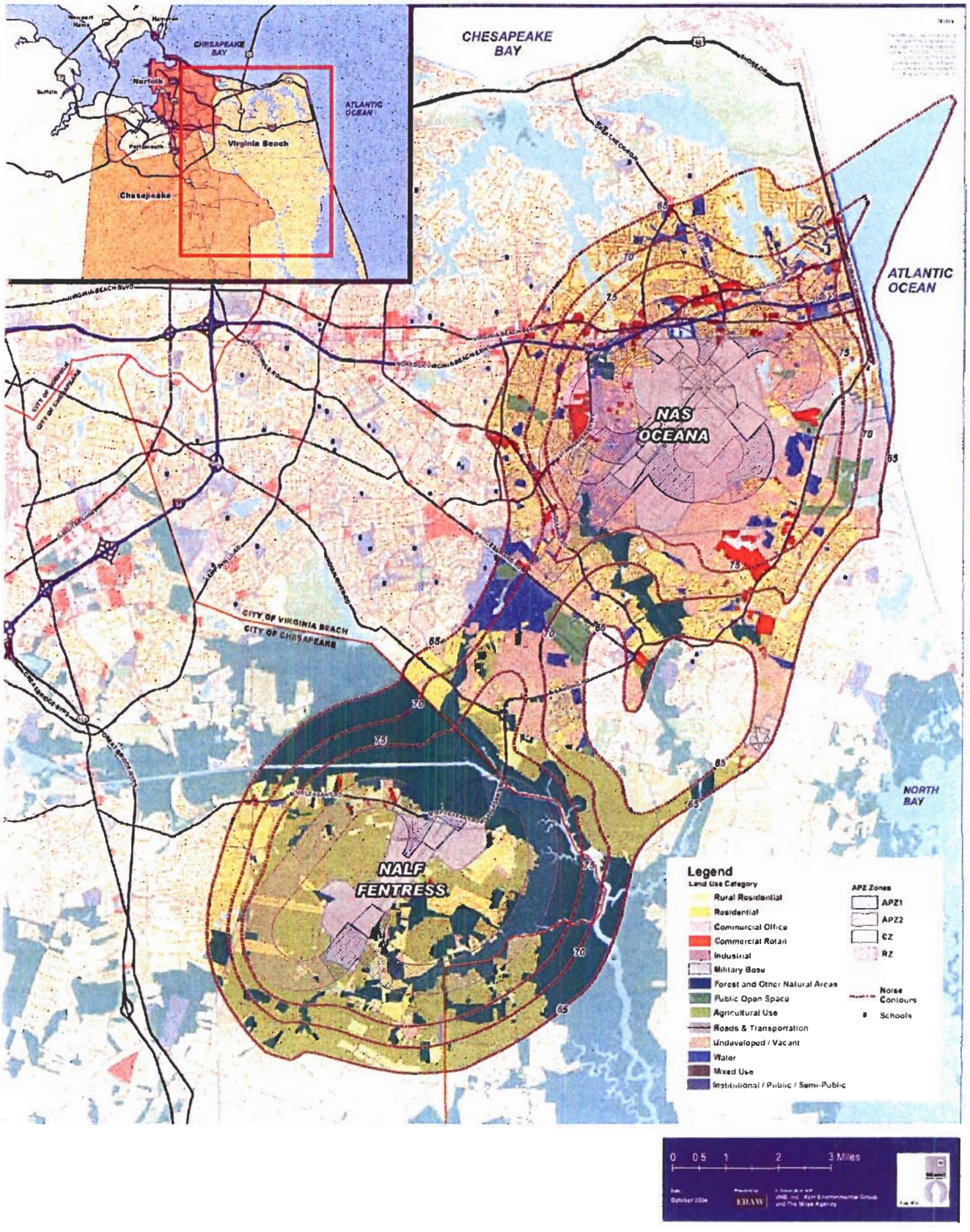
Table 3.2 **Existing Land Use around NALF Fentress (City of Chesapeake)**

Land Use Type	Acres in Noise Zone (LDN)				% of Total AICUZ Acres*
	65-70	70-75	+ 75	Total	
Residential	459	188	47	694	3.0%
Rural Residential	427	397	1,916	2,740	12.0%
Agricultural Use	1,258	908	5,631	7,797	34.1%
Commercial Retail	17	3	64	83	0.4%
Commercial Office	1	0	5	7	0.0%
Institutional / Public / Semi-Public	0	27	7	35	0.2%
Military Base	0	0	2,142	2,142	9.4%
Forest and Other Natural Areas	1,463	1,350	5,284	8,097	35.4%
Public Open Space	0	12	15	27	0.1%
Roads & Transportation	107	81	242	429	1.9%
Undeveloped / Vacant	52	50	280	382	1.7%
Water	85	70	267	422	1.8%
TOTALS	**3,868**	**3,086**	**15,900**	**22,854**	**100.0%**

Source: EDAW, City of Chesapeake Planning Dept., 2004

** Totals calculated within jurisdiction only*

Figure 3.8 Existing Land Use around NAS Oceana & NALF Fentress



3.4.3 NS Norfolk (Chambers Field)

Most of the Chambers Field AICUZ is located within the military boundaries of NS Norfolk (See Table 3.3). Land uses within the noise zones outside of the Navy base are dominated by suburban residential development, comprised mostly of established single family neighborhoods. The next highest categories off-base include water and recreational lands.

High density residential use is considered incompatible in any noise zones. However, the majority of these uses were constructed either prior to air operations at Chambers Field or during or after WWII when Navy operations at NS Norfolk were focused on the waterfront. Little remaining land exists within the AICUZ around Chambers Field for future development (See Figure 3.9).

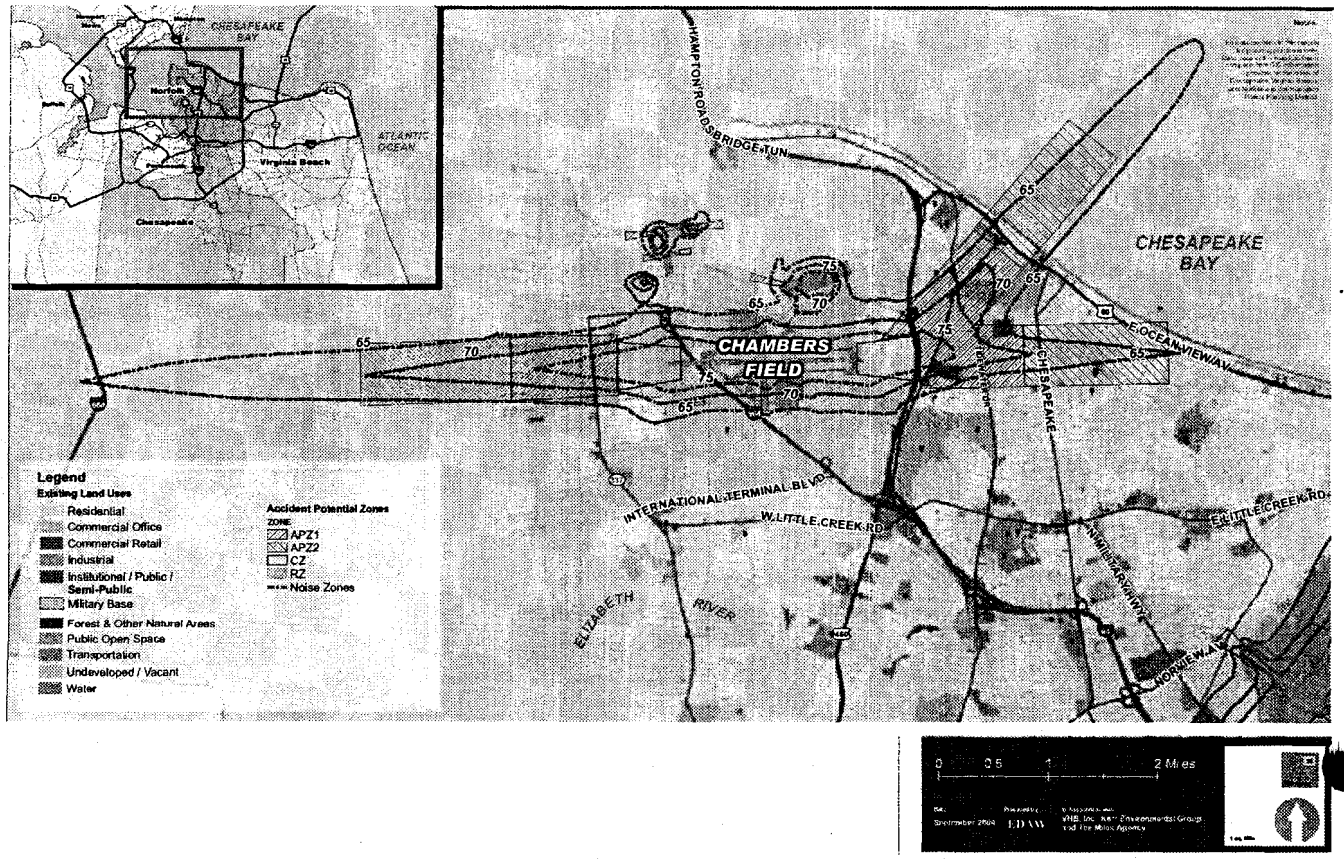
Table 3.3 Existing Land Uses around Chambers Field

Land Use Type	Acres in Noise Zone (LDN)				% of Total AICUZ Acres
	65-70	70-75	75+	Total	
Commercial	16	3	0	18	0.5%
Industrial	14	0	0	14	0.4%
Institutional / Public / Semi-Public	67	17	2	86	2.6%
Military Base	654	531	684	1,869	56.0%
Public Open Space	50	39	0	89	2.7%
Residential	546	276	133	955	28.6%
Undeveloped / Vacant	1	0	0	1	0.03%
Water	174	93	41	308	9.2%
TOTALS	**1,522**	**959**	**860**	**3,341**	**100.0%**

Source: EDAW, City of Norfolk Planning Dept., 2004

Commodore Park residences east of Chambers Field

Figure 3.9 **Existing Land Use around Chambers Field**



3.5 Future Land Use

3.5.1 Virginia Beach (NAS Oceana)

The City of Virginia Beach adopted a new Comprehensive Plan in 2003, guiding future development through broad land use policies. The Plan guides future development into Strategic Growth Areas, regions designated around the City which are suitable for the creation of community nodes, often with access to transportation links and mixed-use services. Compatible land uses are designated for each Strategic Growth Area, recognizing constraints and development limitations of specific areas.

New Convention Center under construction

Twelve strategic growth areas were created, half of which are located within the AICUZ zones (See Figure 3.10). Strategic Growth Areas within the AICUZ noise zones around NAS Oceana recognize the incompatibility of residential uses, instead targeting future growth of limited commercial and industrial uses. The seven growth areas located inside the NAS Oceana AICUZ boundaries include:

- North London Bridge Area
- Hilltop/North Oceana Area
- East Oceana Area
- West Oceana Area
- South Oceana Area
- West Holland Area
- North Princess Anne Commons Area

In addition, the AICUZ also includes the entire Resort Area which is a major area in the City targeted for redevelopment and revitalization.

In total, over 70% of lands in the AICUZ zones lie north of the Green Line (See Table 3.4). Nearly 6,000 acres of the land north of the Green Line are designated as future Strategic Growth Areas. This figure can then be compared to approximately 200 acres designated in Strategic Growth Areas south of the Green Line. Thus, much of the future development growth planned for Virginia Beach is located north of the Green Line.

Lands within the AICUZ south of the Green Line primarily include the Princess Anne and Rural Areas. Created to provide a gradient of development options and densities between the existing development in the north and rural areas in the south, the Princess Anne or Transition Area is one where limited new services and utilities will help ensure such a buffer. The City identified this area along with the Green Line to prevent the extension of capital improvements and utilities into existing rural

Figure 3.10 Future Land Uses around NAS Oceana & NALF Fentress

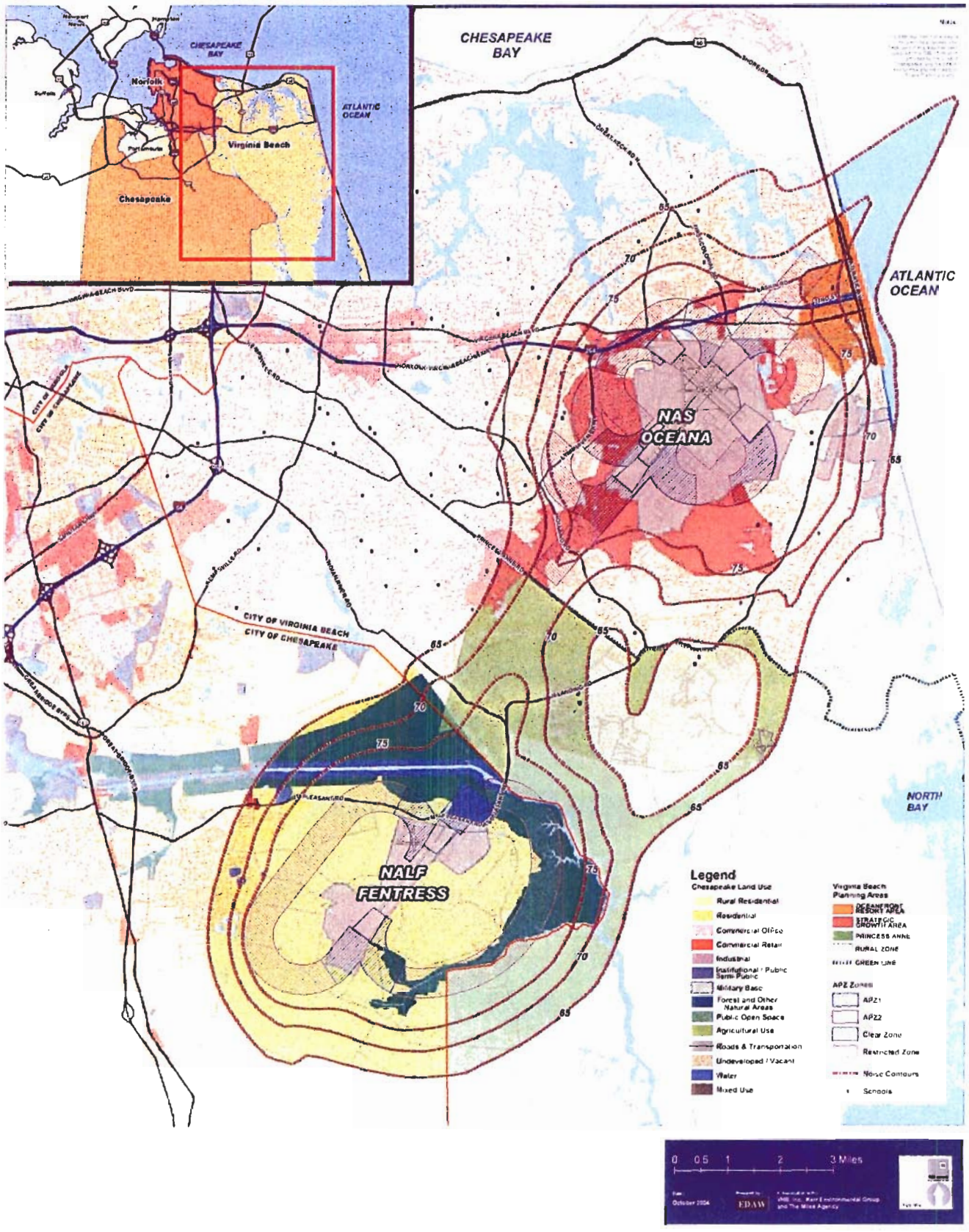


Table 3.4 **Future Land Uses around NAS Oceana**

	Acres in Noise Zone (LDN)			
Areas North of Green Line	**65-70**	**70-75**	**+ 75**	**Total**
Strategic Growth Areas	289	942	4,595	5,826
Primary Residential Area	10,036	4,670	5,495	20,201
Oceanfront Resort Area	603	942	240	1,785
Military	488	291	5,686	6,465
Water	1,047	447	284	1,778
SUBTOTAL	**12,463**	**7,292**	**16,300**	**36,055**
Areas South of Green Line				
Strategic Growth Areas	233	0	0	233
Princess Anne/Transition Area	3,153	1,965	928	6,046
Rural Area	3,196	1,640	1,925	6,761
SUBTOTAL	**6,582**	**3,605**	**2,853**	**13,040**
TOTALS FOR BOTH AREAS	**19,045**	**10,897**	**19,153**	**49,095**

Source: EDAW, City of Virginia Beach Planning Dept., 2004

areas. The new Comprehensive Plan allows residential densities in the Transition Area at a maximum of one dwelling unit per acre, an increase from the existing agricultural zoning but less than other residential uses north of the Green Line. However, rezonings consistent with the Interim Development Guidelines for individual parcels in this area have been postponed pending the completion of this JLUS and other studies under review by the City Council.

The Comprehensive Plan recognizes the limitations of new growth around NAS Oceana for the community's safety while balancing the need for future development of the tourist economy and redevelopment of the resort area along the shore. The community recognizes the opportunities in targeting higher density development around transit outside of the noise zones. Maintaining lower density residential and rural uses in the Princess Anne Area and southern part of the city enables the retention of suburban communities desired by some citizens. Future challenges include the redevelopment of the Resort Area, and other aging residential communities, within the context of land uses compatible with the military mission at NAS Oceana.

3.5.2 Chesapeake (NALF Fentress)

Future land uses envisioned around NALF Fentress are rural and conservation-related. Low density residential use is planned in complementary form with rural preservation in this part of the City. This section of the City is also subject to Level of Service (LOS) standards that require existing, planned or funded infrastructure to be in place before rezonings to more intensive development districts are allowed by City Council. In addition, much of the land to the north and east of Fentress is wetland and marsh areas, including the North Landing Natural Area Preserve, that will remain as permanent open space (See Figure 3-10).

New home construction in Chesapeake near NALF Fentress

Within close proximity to the airfield, because of existing development easements purchased by the Navy years ago, the predominant uses will remain rural residential and agricultural. The majority of residential acreage in the AICUZ is already developed, including subdivisions such as Stratford Terrace, Schoolhouse Crossing and Albemarle Farms west of Fentress off of Mount Pleasant Road.

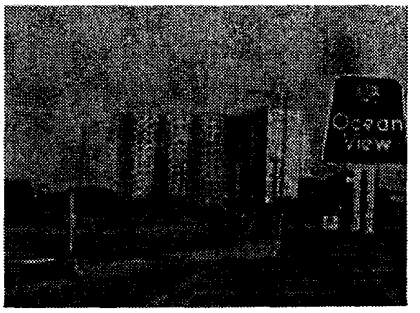
Table 3.5 Future Land Uses around NALF Fentress

	Acres in Noise Zone (LDN)			
Future Land Use Type	65-70	70-75	+ 75	Total
Residential	993	496	143	1,632
Rural Residential & Agriculture	1,824	1,266	8,998	12,088
Commercial Retail	35	3	64	102
Commercial Office	1	0	5	6
Institutional / Public / Semi-Public	133	154	867	1,154
Military Base	0	0	2,142	2,142
Forest and Other Natural Areas	797	1,085	3,398	5,280
Public Open Space	0	12	15	27
Water	85	70	267	422
TOTALS	**3,868**	**3,086**	**15,899**	**22,854**

Source: EDAW, City of Chesapeake Planning Dept., 2004

3.5.3 Norfolk (Chambers Field)

Future land use envisioned around Chambers Field in the City of Norfolk is similar to today's current patterns, primarily because this area is already developed with very little vacant land available for future development. Redevelopment of existing residential units and limited new retail/service uses in certain locations is the primary focus of future land use. New commercial, condominium and other resort-type development is being considered along portions of the waterfront but this development is



West Ocean View in Norfolk

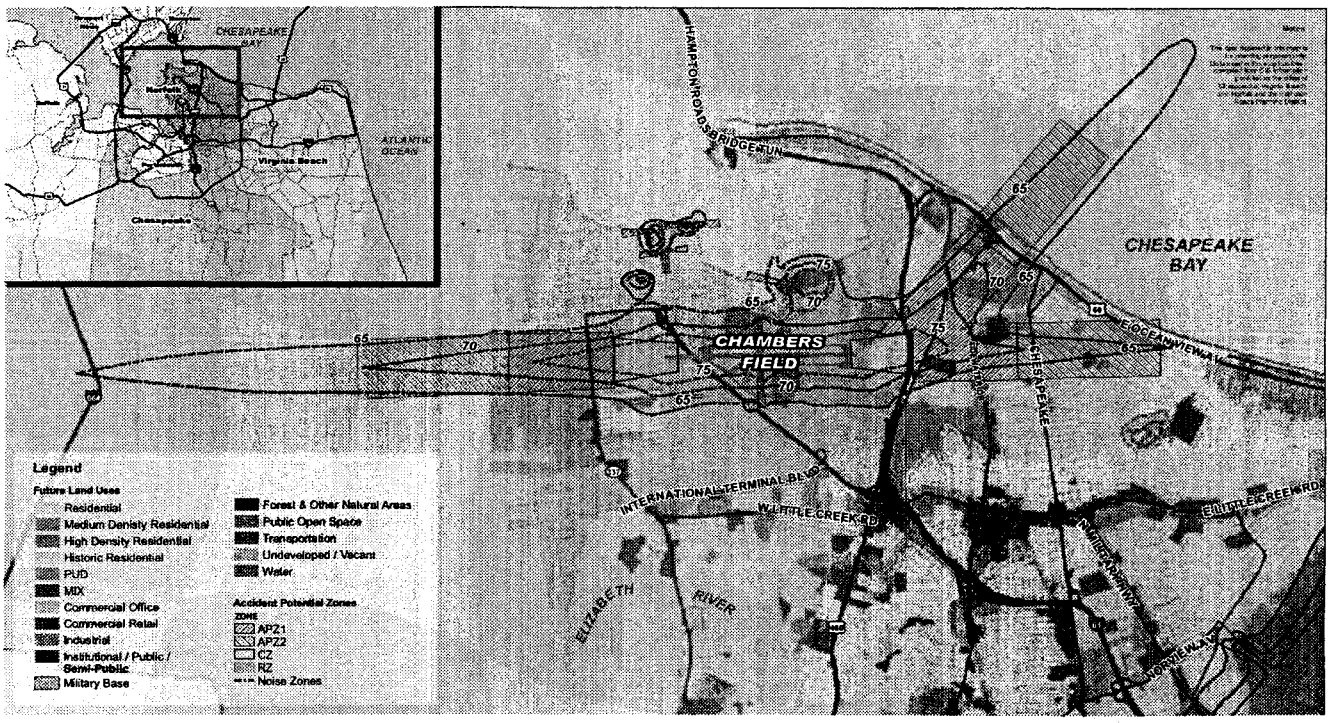
located primarily in East Ocean View and at the end of Willoughby Spit outside of the Chambers Field AICUZ (See Figure 3.11).

Table 3.6 **Future Land Uses around Chambers Field**

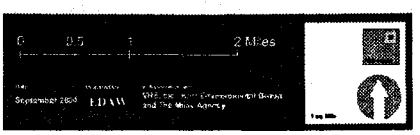
	Acres in Noise Zone (LDN)			
Land Use Type	**65-70**	**70-75**	**75+**	**Total**
Commercial	19	4	0	23
Industrial	14	0	0	14
Institutional / Public / Semi-Public	67	17	2	86
Military Base	654	531	684	1,869
Public Open Space	58	39	0	97
Residential	459	243	111	813
Medium Density Residential	54	24	22	100
High Density Residential	23	0	0	23
Water & Natural Area	174	101	41	316
TOTALS	**1,522**	**959**	**860**	**3,342**

Source: EDAW, City of Norfolk Planning Dept., 2004

Figure 3.11 Future Land Uses around Chambers Field



Source: EDAW, City of Norfolk Planning Dept., 2004



4.0 Existing Noise/Land Use Policies

4.1 Navy

Current Navy land use and noise policy is dictated by the OPNAV Instruction 11010.36B. The most recent revisions to this policy occurred in December 2002, modifying past guidance on land use compatibility within AICUZ zones. As discussed in Chapter 3, this instruction recommends specific guidelines for land uses compatible with maintaining public safety, health, and welfare within each mapped noise zone. The policy reinforces earlier guidance noting incompatibility of all residential uses in any noise zone. In recognition of the need for reducing noise and safety impacts around active airfields with existing development, the Navy has implemented this policy to reduce operational impacts on communities. Civilian communities ultimately decide on local land use and zoning changes in response to the Navy's recommendations.

Modifications to aircraft operations are a primary method of accommodating increasing incompatible development around the airfields. An overview of recent changes at the Hampton Roads airfields includes modifications in flight altitudes, landing patterns, and flight times, as well as upgrades of airfield equipment and facilities at both NAS Oceana and NALF Fentress. The goal of these changes has been to reduce noise impacts on uses within the noise zones from mission-related operations. Strict review and assessment of future potential changes would be required in order to prevent additional erosion of "true to life" training for Fleet pilots.

Specific changes recently implemented by the Navy to reduce noise impacts include the following:

Operational Changes:

- Arrivals are held to higher altitudes closer to the airfield
- Flights destined to offshore operating areas are vectored directly over water
- Southbound departure intermediate segments level off until 15 miles south

- No overhead break, practice approaches, or high power engine turns occur at NAS Oceana between 11:00 pm and 7:00 am
- Tighter landing pattern emphasized
- Navigation aid installed at NALF Fentress

Other Changes:

- Mid-downwind light beacon for Runway 5 installed at NALF Fentress
- Fly 800′ pattern at NALF Fentress is non-standard
- Fly 1,000′ patterns at NAS Oceana and Chambers Field are non-standard
- Helicopter arrival/departures routed over Camp Pendleton vice Rudee Inlet
- Instrument approach patterns elevated to 2,000 feet vice 1,500 feet
- Field Carrier Landing Practice (FCLP) restricted at NAS Oceana
- Afterburner use restricted from the airfield boundary until in an operating area unless in an emergency situation
- Flight ops web page created
- Community concerns hot line implemented
- CO reviews of all noise concerns begun
- Hush house construction at Oceana

4.2 Norfolk (Chambers Field)

Existing planning policies in the City of Norfolk recognize the military presence in the community and importance of recognizing the mutual relationship between community growth, goals, and the military establishment. Tools exist at both the current and comprehensive planning levels, protecting the health, safety, and welfare of community residents (See Table 4.1). Regulatory tools guiding planning decisions include zoning districts and zones establishing conditions for safe development and coordination of community development around military installations. The Airport Safety Overlay District exists to prevent obstructions to safe air operations at both the civilian and military airports in Norfolk. The ordinance defines safety zones and height restrictions around the airfields, limiting uses which obstruct safe operations. CFR Part 77.28 for military airports is specifically referenced as the basis for height restrictions designated in the ordinance. Examples include any uses which impair pilot visibility or interfere with aircraft landings. Non-conforming uses are grandfathered in under the ordinance, with restrictions on new obstructions.

Noise zone disclosure and sound attenuation ordinances are not currently included within the Zoning Code. No policies exist which require notification of a property's presence in airport zones to prospective buyers, renters, or leasers. Sound attenuation is also not required in the development or redevelopment of existing neighborhoods surrounding Chambers Field.

Long-range planning policy decisions are governed by a general Comprehensive Plan, guiding growth into established areas utilizing a framework of urban revitalization. The plan identifies the need to foster joint development and shared military–civilian use of land and facilities. It emphasizes the need for continuing dialogue between the military and community, building support for growth in military investment and population.

Policies encouraging clustering of new development also exist, promoting a more compact urban form, ideally out of the constrained zones present around the Naval Station. Little land area within the City is encumbered by safety and noise zones as compared to Virginia Beach or Chesapeake; thus, advocacy for, or public interest in, mitigation measures have been minimal.

4.3 Chesapeake (NALF Fentress)

Planning policy in the City of Chesapeake addresses both existing and future development, organized within a framework of encouraging managed growth in developed areas and maintaining environmentally sensitive lands in rural areas. The toolkit for managing this growth is varied, including administrative tools such as zoning districts, level of service standards, and cluster zoning provisions (See Table 4.2). Policy-based tools include programs for acquisition of conservation easements and noise-related real estate disclosures. Each of these tools guides community growth away from areas of concern, including active agricultural operations, environmentally sensitive lands, and active military installations.

The administrative tools controlling growth around NALF Fentress focus on zoning control through established zones and overlay districts. The intent of the Fentress Overlay District is permitting limited development around the airfield, focusing on commercial and industrial uses rather than residential, institutional, or educational. Also included in the District is the provision that new development should not burden existing services and is compatible with the character of the surrounding rural area.

This Overlay District, first implemented in 1990, includes property around NALF Fentress in the 65-70 DNL noise contour, the 70-75 DNL noise contour, and the greater than 75 DNL noise contour; however, land use and noise attenuation regulations apply only to those areas in the greater than 75 DNL noise contours. Residential development and other related uses such as churches, schools, and childcare centers are discouraged in the greater than 75 DNL noise contour unless they are allowed under the current zoning classification of that property. Proposals for certain limited commercial and industrial development in the greater than 75 DNL noise contour require a conditional use permit (CUP). The Chesapeake Planning Commission reviews all CUP applications and makes recommendations to the City Council. The Council then makes the final decision on all CUP applications.

Height restrictions for buildings and structures in proximity to NALF Fentress are set out in general zoning regulations and in a separate "Airport Safety Zone" ordinance that governs uses in proximity to all private and military airports in Chesapeake. The Airport Safety Zone ordinance references CFR Part 77.28 for airport zones, approach zones, transition zones, and conical zones of NALF Fentress. Also, the Fentress Overlay District requires that conditional non-residential buildings and structures in the greater than 75 DNL noise contour comply with Navy AICUZ height restrictions.

The Overlay District specifies that certain conditional non-residential buildings and structures occupied in the greater than 75 DNL noise contour must be constructed with an outdoor to indoor noise level reduction of 35 dB. This standard was recently adopted at the request of the U.S. Navy and must be certified by an acoustical engineer. In addition, new residences in the greater than 75 DNL noise contour are to be constructed in accordance with the noise attenuation standards in the Uniform Statewide Building Code. All residential and non-residential site plans, subdivision plats, and sales contracts and leases within all noise zones of the Fentress Airfield Overlay District must include a written statement that such property is located "partially or wholly within an aircraft noise and/or accident zone and may be subject to above-average noise levels."

Minimum development standards in the Overlay District also include:

- All lighting of conditional non-residential uses in the greater than 75 DNL noise contour should be directed downward and should not interfere with airfield operations. The extent of light interference is to be determined by the U.S. Navy.

- No conditional non-residential building or structure located in the greater than 75 DNL noise contour should exceed the U.S. Navy height restrictions under the AICUZ program.

Cluster zoning provisions include district allowances for Planned Unit Developments (PUDs). The districts are intended to promote unified development of larger tracts of land, encouraging the efficient use of land with improved amenities and environmental sensitivity.

Policy-based tools include a recently-adopted Comprehensive Plan envisioning a managed growth scenario, balancing economic growth, military viability, and environmental protection. The Plan sets policy for guiding growth into existing developed areas with adequate infrastructure, minimizing the burden of new development on community services. Targeting the southern half of the City for preservation of rural character and development, policies encourage the viability of active agricultural operations. Maintaining viable agriculture in the City aids the balanced future of community services, lessening the burden of residential demands on such infrastructure as schools, police, fire, and utilities. Coupled with the establishment of programs to purchase development rights, using conservation easements, the Comprehensive Plan helps ensure future protection of existing open space.

The Plan also helps maintain the viability of military operations within City limits, encouraging limited residential uses around NALF Fentress. This vision of limited residential use is in concert with the protection of agriculture and environmentally sensitive lands, helping promote both goals of conservation and public safety. Encouraging lower density uses near Fentress limits public exposure to noise and safety impacts, resulting in higher community quality of life and continued economic viability of the military resource.

4.4 Virginia Beach (NAS Oceana)

The planning framework in the City of Virginia Beach is multi-faceted, focused on a long-range vision for the future of the built environment and community values. Tools for accomplishing this vision include traditional planning tools such as zoning, a Comprehensive Plan (updated in 2003), and specific area preservation ordinances (See Table 4.3). These policies are intended to guide the City in providing economic stability and a high quality of life for the community. Balancing the redevelopment of an aging infrastructure, demand for new growth along its southern border, and economic vitality, Virginia Beach has crafted planning policies addressing each of these important issues.

Comprehensive Plan

The Comprehensive Plan establishes the policy framework for a jurisdiction managing growth and promoting economic development. The foundation of the Plan is the maintenance of an economically vibrant community, promoting tourism and providing high quality communities and services for citizens. The Plan guides future development into Strategic Growth Areas, which are regions designated around the City suitable for the creation of community nodes, often with access to transportation links and mixed-use services. Compatible land uses are designated for each Strategic Growth Area, recognizing constraints and development limitations of specific areas. The Strategic Growth Areas within the AICUZ noise zones around NAS Oceana recognize the incompatibility of residential uses, instead targeting future growth of limited commercial and industrial uses.

The Comprehensive Plan recognizes the limitations of new growth around NAS Oceana for the community's safety while balancing the need for future development of the tourist economy and redevelopment of the resort area along the shore. The City recognizes the opportunities in targeting higher density development around transit outside of the noise zones. Maintaining lower density residential and rural uses in the Princess Anne (or Transition) Area and southern part of the City enables the retention of suburban communities desired by some citizens. Future challenges include the redevelopment of the Resort Area, and other aging residential communities, within the context of land uses compatible with the military mission at NAS Oceana.

Zoning Ordinance

The Virginia Beach Airport Noise Attenuation and Safety Ordinance, first adopted in 1994, establishes four airport noise zones (less than 65 DNL, 65 to 70 DNL, 70 to 75 DNL, and greater than 75 DNL) and three APZs (Clear Zone, APZ 1, and APZ 2), which conform to the projected 1999 noise contours and APZs for NAS Oceana. The ordinance limits certain conditional uses within the aircraft APZs and airport noise zones in accordance with the Navy's land use compatibility guidelines previous to the recent December 2002 update. The ordinance does not prohibit sensitive uses in all noise zones, as the most recent Navy instruction recommends in its land use guidelines.

The ordinance also requires acoustical performance standards for residential use group buildings and written disclosure for property sold, rented, or leased within the AICUZ. This notification is required at time

of contract or lease on all properties except those designated solely for agricultural purposes.

The ordinance also contains height restrictions on development and natural vegetation recognizing the need to limit obstructions to create safe air operations around NAS Oceana. These restrictions apply to the imaginary surfaces generated geometrically from the runway in accordance with similar FAA restrictions around civilian airports. The Planning Department delineates height limitations for protecting navigable airspace in compliance with 14CFR77.21.

Princess Anne (or Transition) Area

Created to provide a gradient of development options and densities between the existing development in the north and rural areas in the south, the Princess Anne Area is one where limited new services and utilities will help provide such a buffer. The City identified this area and established the "Green Line" as growth management tools to prevent the extension of capital improvements and utilities into rural areas to the south. The new Comprehensive Plan identifies acceptable densities of the Princess Anne Area at a maximum of 1 dwelling unit per acre, an increase from the existing agricultural zoning but less than other residential uses north of the Green Line.

Without the guidelines established for the Princess Anne (or Transition) Area, future growth would continue unchecked into the southern half of the city. Demand for new infrastructure associated with residential development, including roads, utilities, and schools, would increase, leading to greater financial strain on the entire community in providing services. Existing environmental resources would be consumed by new development and extension of services, reducing the region-wide value of sensitive habitats and land for flora and fauna.

Redevelopment

Redevelopment is crucial to the future of an economically balanced and vibrant Virginia Beach. The Comprehensive Plan sets a strategy for guiding this development, utilizing primarily the Strategic Growth Areas concept discussed previously. Specific actions include construction of a new conference center to replace the Pavilion Conference Center and redevelopment of the beach Resort Area. Both of these actions are far-reaching, influencing the larger land use pattern and structure of the City. Both plans address areas of land encumbered by the existing AICUZ noise zones for NAS Oceana. Assessing uses compatible with both the military

mission and redevelopment goals is a primary challenge for future planning efforts in this area.

Targeted as a key element of the present and future economic well-being of Virginia Beach, the Resort Area is the key tourism destination, serving an increasing number of summer tourists and year-round residents. Redevelopment of the aging infrastructure is planned, resulting in a vibrant mixed use area with urban residential units, upgraded hotel facilities and services, and community icons such as the new convention center to the west. This redevelopment is crucial in attracting increased numbers of year-round residents, tourists, and businesses.

Accomplishments

As the primary economic engine in Virginia Beach, the military presence is a factor for which planning policies have accounted over the past decades. The Navy has operated NAS Oceana since the 1940s, when land surrounding the base was undeveloped. Growth in the past 60 years, and especially within the last decade, has resulted in land use incompatibilities around the airfield. The City and Navy have been working together for 30 years to develop policies addressing the need to balance this growth with a safe environment for continued military operations.

The City has enacted both administrative and policy-based tools to guide growth in a compatible manner around NAS Oceana. Examples include amendments to the zoning ordinance in the form of an Airport Noise Attenuation and Safety Ordinance, clustering ordinances for growth encouraging compact development patterns, establishment of Strategic Growth Areas, and building code revisions/real estate disclosures in high noise areas. The goal of each of these tools is the same, accommodating existing and future military missions through encouragement of compatible development and education of the community on noise issues and real estate possibilities.

Airfield Encroachment

Over time, decisions by Virginia Beach officials have occurred, resulting in land use incompatibilities within the noise zones surrounding NAS Oceana. Opportunities for preventing future residential incompatibilities as well as redevelopment of existing parcels remain. It should be noted, though, that some of the existing problems include 1950s and 60s development around the airfield, which pre-dates Navy AICUZ designations and land use guidelines.

In addition, certain planning policies in areas such as the Resort Area, Lynnhaven Mall area, Transition Area and other portions of the Virginia Beach AICUZ conflict with current Navy land use guidelines. These planning policies either have resulted in, or could cause, incompatible land development around Oceana. Balancing the growth interests of the City with Navy policies is a focus of this study and major challenge that will continue in the future.

Table 4.1 Existing Noise / Land Use Policies : City of Norfolk

Existing Tools	Definition	Purpose/Intent
Military Installation (MI) District	Specifies permitted and special exception uses. Also encourages coordination with the Navy: 10-7.3 "In areas of MI Districts not affected by military security, in areas where commercial, residential, or mixed use developments are proposed, and in areas where joint public/private development may be explored, the federal government is encouraged to establish a coordinated planning process with the City of Norfolk to achieve both federal and local benefits, to minimize development impacts, and to help meet the objectives and policies of the General Plan of Norfolk."	Special Purpose District intended to recognize the location of major single use and multiple use military facilities in the city. It is recognized that local government has no official regulatory control over development and users on federal property.
Airport Zones	Establishes conditions for land lying beneath the approach surfaces, transitional surfaces, horizontal surfaces, and conical surfaces as they apply to the Norfolk International Airport and NS Norfolk (Chambers Field).	To prevent the creation or establishment of obstructions that are hazards to air navigation.
Airport Overlay District	Airport Safety Overlay District that applies height limitations, use restrictions.	That the prevention of these obstructions should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.
Planned Development (PD)	PLANNED DEVELOPMENT (PD) The development standards including the yard and setback requirements, the height limitations, parking requirements and the open space areas are established as a function of the approval of the PD application and the location and arrangement of structures, parking areas, walks, lighting and appurtenant facilities must be compatible with the surrounding land uses.	To encourage the efficient use of land and resources, to promote greater efficiency in public and utility services, and to encourage innovation in the planning, design and building of all types of development in the City.
Chesapeake Bay Preservation Area District	Chesapeake Bay Preservation Area District. The district including areas designated as a Resource Protection Agency (RPA), Resource Management Area (RMA), or an Intensely Developed Area (IDA). Applies additional standards for lands in the Chesapeake Bay Preservation Area District in addition to the underlying zoning.	To protect state waters, reduce pollution, and promote water resource conservation.
Level of Service (LOS) Standards	none	
Easement Purchase	none	
Real Estate Disclosures	none	
General Plan	Policies to continue to monitor defense activities and liaison with the Navy.	To foster joint development and shared military-civilian use of land and facilities, while continuing to support growth in military investment and population.

Table 4.2 Existing Noise / Land Use Policies : City of Chesapeake

Existing Tools	Definition	Purpose/Intent
Airport Zones	Establishment of zones including all of the City area lying beneath the approach, transitional, horizontal, and conical surfaces as they apply to the Chesapeake Municipal Airport, Hampton Roads Airport, and Fentress Airfield.	The prevention of obstructions to air navigation is accomplished, to the extent legally possible, by the exercise of police power without compensation.
Airport Overlay District	Zoning district with conditions in addition to those present in the baseline zoning classification of the property. The Overlay District cannot prohibit any development allowed under the baseline classification.	Allow limited commercial and industrial development within the area of southern Chesapeake identified as AICUZ noise zone greater than 75 dB DNL, subject to individual case review to ensure that any proposed commercial or industrial use is compatible with the surrounding rural area and does not improperly burden the existing city infrastructure and services.
Planned Unit Development (PUD)	An area of land under unified ownership or control to be developed as a single development operation or phased series of development operations where two or more uses may be included.	Within all zoning districts, except C-1 and C-2, it is intended to permit the establishment of districts for specialized purposes where tracts are in a suitable location, area, and character for the uses and structures proposed to be planned and developed in a unified manner. PUDs are intended to promote the economical and efficient use of land, an improved level of amenities, creative design, and a better environment.
Chesapeake Bay Preservation Area District	The district including areas designated as a Resource Protection Agency (RPA), Resource Management Area (RMA), or an Intensely Developed Area (IDA).	Protect and improve the water quality of the Bay, its tributaries, buffer areas, and other state waters, by minimizing the potential adverse effects of human activity upon these areas.
Level of Service (LOS) Standards	Standards focusing on timing and management of new growth in a community. Standards set a measurable standard of capacity or performance for a given public facility or service that must be planned, funded, or in place in order for a particular development application to receive approval.	Manage the location, type, and form of new development to accommodate growth while ensuring that development does not exceed the available and planned capacity of public services and facilities.
Easement Purchase	The purchase of a portion or all of the development rights on a property. Compensation is provided to the landowner in exchange for restrictions placed on the land's deed, in perpetuity.	Encourage and promote preservation of open space and agricultural lands throughout the City by means that are voluntary rather than regulatory.
Real Estate Disclosures	Provision of a written disclosure to all potential buyers or lessees at the time of site plan and subdivision plat approval or sale of contract/rental of property.	Make potential buyers and lessees aware of noise environment on property.

Table 4.3 Existing Noise / Land Use Policies : City of Virginia Beach

Existing Tools	Definition	Purpose/Intent
Airport Zones	Sets standards for conditional uses in airport noise zones greater than 75 DNL, 70-75 DNL and 65-70 DNL, and aircraft accident potential zones as shown on the AICUZ map prepared by the City (same as 1999 Navy AICUZ map).	To protect the public health, safety and welfare from the adverse impacts associated with excessive noise from flight operations at nearby airports and military air facilities and potential aircraft accidents by limiting certain conditional uses which are incompatible.
Airport Overlay District	AIRPORT NOISE ATTENUATION AND SAFETY ORDINANCE: Establishes additional standards for property within four (4) airport noise zones and three (3) aircraft accident potential zones.	Protect the public health, safety and welfare; ensure that the construction of residential uses include appropriate sound reduction; ensure disclosure to purchasers, renters or lessees of property within airport noise zones and aircraft accident potential zones.
Planned Development (PD) Districts	ARTICLE 11. PLANNED DEVELOPMENT DISTRICTS: Establishes the PD-H1 and PD-H2 Districts.	Permits variation from the underlying zoning district to achieve compatibility with the development and zoning of the land adjacent to the district and to promote public benefit.
Chesapeake Bay Preservation	CHESAPEAKE BAY PRESERVATION AREA ORDINANCE: Applies additional standards for lands in the Chesapeake Bay Preservation Area in addition to the underlying zoning. The area includes: Resource Protection Areas (RPA) and Resource Management Areas (RMA).	To protect water quality with performance standards intended to prevent a net increase in non-point source pollution.
Watershed Management	SOUTHERN WATERSHEDS MANAGEMENT ORDINANCE: Applies additional performance standards and design criteria to land in the within the watershed of the North Landing River, the Northwest River and Back Bay.	To protect, enhance and restore the quality of waters within the Southern Watersheds of the City.
Level of Service (LOS) Standards	none	
Easement Purchase	AGRICULTURAL LANDS PRESERVATION ORDINANCE: The City acquires, in accordance with the provisions of this Ordinance and to the extent of available funding, the development rights on eligible parcels of farmland as shown on the City's map "Area of Applicability, Agricultural Reserve Program" available from the City Dept. of Agriculture.	To promote and encourage the preservation of farmland in the rural southern portion of the City, where agricultural uses predominate, by means which are voluntary, rather than regulatory.
Real Estate Disclosures	Any person marketing property for sale, rental or lease within any noise zone or accident potential zone must provide written disclosure that property is within an aircraft accident zone or an area affected by aircraft noise; written notification must also be placed in all sales contracts and leases.	To disclose to potential purchasers, renters or lessees the existence of aircraft noise and the potential for aircraft accidents associated with proximity to airport operations.

Table 4.3 (cont.) Existing Noise / Land Use Policies : City of Virginia Beach

Existing Tools	Definition	Purpose/Intent
Comprehensive Plan	Stated Goal: "It has been and will continue to be the policy of the City to work in a close, positive and collaborative manner to achieve our respective goals and objectives. This means achieving a reasonable balance between the Navy's need to maintain effective military readiness, both operationally and strategically, and the City's need to maintain effective implementation of its growth management and land use planning policies."	To promote general policy goals City-wide.
Comprehensive Plan Strategic Areas	North London Bridge Area	Area is planned to provide a range of commercial retail activities and services to meet the needs of all its citizens in an attractive and well-maintained environment. AICUZ restricts some areas in the eastern portion. Plan proposes low-rise, low-intensity industrial and some limited office use for London Bridge Road, north of International Parkway, and the intersection of London Bridge/ Potter's Road because it is in a high AICUZ zone.
Comprehensive Plan Strategic Areas	Hilltop/North Oceana Area	Because of the influence of AICUZ high noise in this area, non-residential uses are recommended for this area including office, retail, institutional and hotel.
Comprehensive Plan Strategic Areas	East Oceana Area	Much of this area is constrained by floodplain, high noise and accident potential zones. Planned for low rise, light industrial uses and limited retail to the east and low intensity industrial and other utilitarian activities to the west.
Comprehensive Plan Strategic Areas	West Oceana Area	All of this area is inside the AICUZ high noise zone. Low intensity industrial uses are planned for the southern and eastern part. The developable land west of Lynnhaven Parkway is planned for corporate office, retail and other comparable commercial use.
Comprehensive Plan Strategic Areas	South Oceana Area	A significant portion of this area is located inside the APZ for the approach to NAS Oceana runways 5L and 5R. Developable land located in the western region is planned for non-residential uses to include a mix of light industrial, low- rise office and limited retail use. No additional residential uses are recommended for any part of this Strategic Growth Area.

Table 4.3 (cont.) Existing Noise / Land Use Policies : City of Virginia Beach

Existing Tools	Definition	Purpose/Intent
Comprehensive Plan Strategic Areas	West Holland Area	An AICUZ Accident Potential Zone corridor covers the southern portion of this Strategic Growth Area. On the south side of Dam Neck Road, the undeveloped parcels of land between this road and Landstown Meadows neighborhood are located in the APZ and are suitable for low intensity retail and service uses.
Comprehensive Plan Special Areas	Transition Area/Princess Anne	Plan recommends a mixture of open space, recreational areas, environmental conservation areas and quality housing, predominately low intensity development. Cluster housing and other creative planning and development techniques are encouraged to preserve open space, agric. land and environmentally sensitive areas.
Comprehensive Plan Special Areas	Resort Area	Plan includes a series of initiatives to increase economic development opportunities, create Resort Area Gateways and enhance the physical environment, including the area around the Convention Center.

Recommendations

5.0

5.1 Compatibility Tools

The Hampton Roads JLUS Working Group met on a regular basis throughout the JLUS planning process to evaluate a full range of possible compatibility tools. The JLUS team also conducted a series of Public Information sessions and small group meetings with community stakeholders to gather feedback on possible encroachment reduction strategies.

Representatives of local jurisdictions, the Navy, and the public voiced a wide variety of issues, concerns, and ideas during the study. The resulting set of tools seeks a balance among these diverse interests by stressing:

- the feasibility of implementation;
- the ability to sustain the economic health of the region and protect individual property rights;
- the protection of the critical military missions performed by NAS Oceana, NALF Fentress, Chambers Field and adjacent military facilities; and
- the protection of the health, safety, welfare, and overall quality of life of those who live and work in the Hampton Roads region.

This section describes eight basic approaches to promoting compatibility between Navy airfield operations and surrounding land uses.

Coordination/Organization

One of the most critical outcomes of the JLUS study is the process itself. Stakeholders from the community and military have the opportunity to build collaborative relationships, identify mutual interests, and work toward reasonable solutions that protect both civilian and Navy goals. Coordination and organization tools create the institutional capacity to support on-going implementation.

Communications/Information

These tools establish clear mechanisms for information exchange among residents, local governments, and the military. Increased communication raises overall awareness of Navy activities and their associated impacts, as well as identifies possible approaches to reduce the effects on surrounding communities.

Sound Attenuation

One of the concerns expressed during public involvement activities is that noise generated by aircraft can diminish the quality of life for residents living around Oceana, Fentress, and Chambers Field. This strategy seeks to reduce the intrusiveness of aircraft noise by protecting vulnerable land uses, particularly houses and schools.

Sound attenuation refers to special construction practices designed to lower the amount of noise that penetrates the windows, doors, and walls of a building. Sound Transmission Class (STC) ratings measure the effectiveness of these building materials at blocking noise. Noise Level Reduction (NLR) represents the difference between outside and inside noise levels. Materials with higher STC ratings reduce more outdoor noise, making indoor areas quieter and increasing the amount of NLR.

Real Estate Disclosure

Prospective developers, buyers, and renters, particularly those new to an area, may be unaware of the special conditions that are part of living near active military airfields. A strong Real Estate Disclosure Ordinance educates individuals about the potential hazards and nuisances of aircraft operations and it allows them to make well-informed decisions about property investment around military installations.

Planning and Public Policy

Planning and public policy tools are intended to guide overall growth patterns within local jurisdictions in ways that support future military/civilian compatibility. In general, these strategies encourage new development in already developed areas away from military installations as a means of reducing future land use conflicts.

Land Use Regulations

These include provisions or regulations that control development densities and land use activities within established noise and safety zones around the airfields to protect the health, safety, and welfare of the public and maintain compatibility with military operations. These measures are intended to accommodate future growth, while minimizing the concentrations of people and activities that may trigger conflicts with noise and other operational impacts. Since local jurisdictions exercise land use control through tools such as zoning, any regulatory tool or revisions to current zoning would be implemented through the established local

government legislative process. Zoning revisions need to recognize legal property rights in accordance with existing Commonwealth of Virgina land use laws.

Acquisition

Acquisition refers to a series of tools designed to eliminate land use incompatibilities through voluntary transactions in the real estate market and local development process.

Acquisition strategies are particularly effective tools because they advance the complementary goals of shifting future growth away from the airfields, while protecting the environment, maintaining agriculture, and conserving open spaces and rural character. A critical first step in implementing acquisition tools is to identify areas of conservation interest. Laying out protection priorities around airfields is of value in exploring possible partnerships with non-profit conservation groups and in requesting future acquisition funds.

Military Operations

Just as the spread of growth from nearby jurisdictions can threaten the viability of Oceana, Fentress, and Chambers Field operations, change in planned military missions, aircraft, and land use activities at the bases can affect the livability of surrounding communities. The purpose of operational modifications is to minimize the noise and safety impacts experienced by communities around the Navy airfields, while protecting the viability of the military mission.

The sections that follow identify the specific compatibility tools that would be available to: the overall Hampton Roads region, including the Cities of Norfolk, Virginia Beach and Chesapeake; the Navy; and each individual local jurisdiction.

5.2 The Hampton Roads Region

The JLUS identifies the following communication, coordination, policy, disclosure, and sound attenuation tools for all of the jurisdictions within the Hampton Roads region (See Table 5.1).

1. **Form a Hampton Roads Joint Land Use Regional Coordinating Committee to sustain implementation.**

To continue the momentum created by this effort, the local jurisdictions, in collaboration with the Navy, would establish a Hampton Roads Joint Land Use Regional Coordinating Committee. The committee would consist of select members of the JLUS Committee, representing all participating local governments, the Navy, and community, environmental, and development interests. This Committee could also be expanded to include the Hampton Roads peninsular communities and military representatives in that part of the region. The Committee would have both Technical and Policy Committees similar to the JLUS Committee structure and would meet bi-annually (or as necessary) to review military-community affairs throughout the Hampton Roads area. HRPDC is suggested as the organization to provide staff support, meeting space and other logistical support in a similar manner as for other HRPDC-sponsored committees.

The committee would serve as a forum for public input, the review of major land use proposals both within the military and civilian sectors, and on-going consensus-building to support sound, regionally-based, and cooperative community planning decisions. Any military land use and operations-related issues affecting the local communities could be introduced and discussed using this forum for community input, dialogue and recommended implementing actions.

2. **Provide on-going and updated information on JLUS implementation through local governments.**

Under this communications strategy, each participating jurisdiction would maintain an on-going JLUS link from its web site that provides residents, developers, and businesses with information about Navy operations, the JLUS results and on-going implementation efforts, procedures to submit comments, and any additional local measures to promote land use compatibility around the military installations, including the recommendations contained in this report.

A particular emphasis of this tool is improved public awareness of height restrictions currently in effect around military and civilian airfields and the safety hazards associated with development that obstructs airspace.

3. **Request additional information from the Federal Aviation Administration on development requirements and noise mitigation assistance.**

With this tool, the region would supplement educational outreach by requesting a briefing from the Federal Aviation Administration (FAA) on development requirements around airfields. The City of Virginia Beach is willing to take the lead in coordinating this briefing for citizens throughout the area.

4. **Adopt expanded sound attenuation requirements for new residential construction in noise affected areas.**

Though some sound mitigation measures are part of current building codes, local governments pursuing this tool would work through the state building code review authorities to strengthen and expand existing attenuation practices within the region. Standard construction typically reduces outdoor to indoor noise by about 20 dB to a level of 40-45 DNL. Current Navy guidance, however, recommends a residential Noise Level Reduction (NLR) of at least 25 dB in 65-70 DNL; a NLR of 30 dB in 70-75 DNL; and NLR of at least 35 dB in 75+ DNL. The current state building code requires a reduction in average noise to these levels; however, further reduction should be investigated and implemented if deemed appropriate and/or feasible. In addition, noise zone reductions for residential structures in noise zones of 60-65 DNL (by approximately 20 dB) should be researched and considered by the regional jurisdictions. For reference purposes, sample noise reduction standards for residential construction (developed by the Eastern Carolina Council of Governments for the area around MCAS Cherry Point) are provided in Appendix 2.

Implementation would result in a tiered structure that requires sound protection beyond standard building methods based upon AICUZ noise contours. As part of this strategy, jurisdictions would set sound mitigation conditions for any new residential construction in a noise zone that meet the recommended indoor NLR standards based upon Navy guidance and noise attenuation codes in other communities. Changes in the Virginia State Building Code will likely be required in order to mandate and enforce expanded noise attenuation standards in new construction.

5. **Enforce enhanced sound attenuation practices.**

This tool emphasizes the active local enforcement of strengthened noise attenuation construction standards to ensure that homes without adequate structural protection are not built within noise affected areas.

6. **Require sound attenuation for schools in the AICUZ.**

Along with housing, schools are among the most noise sensitive of uses. In buildings without adequate sound attenuation, aircraft noise may affect the cognitive abilities of school-age children. This tool is geared toward protecting the learning environment of schools by requiring that all new educational facilities built in noise affected areas meet the NLR. Research is needed to confirm the appropriate and feasible NLR that should be required for high noise areas around Navy airfields in Hampton Roads.

7. **Implement recently-enacted State legislation requiring noise attenuation for certain non-residential structures in the AICUZ.**

Certain non-residential structures including hospitals, churches, office buildings and other people intensive uses should be considered for noise attenuation in addition to residential dwellings. The Virginia State legislature has recently passed legislation allowing jurisdictions the authority to adopt regulations requiring sound attenuation for certain non-residential buildings (see Appendix 3). Research needs to be conducted on appropriate noise levels and noise attenuation techniques for these types of structures. Changes in the State Building Code can then be pursued to enable the Hampton Roads jurisdictions the ability to require noise attenuation as appropriate for proposed new structures in the AICUZ.

8. **Promote improved sound attenuation construction practices.**

As part of this strategy, local governments would establish partnerships with local schools and the regional building industry to support and promote innovative research and development activities during the construction of buildings in high noise zones.

9. **Require early real estate disclosure in areas exposed to safety issues or average noise levels of 65 dB or higher.**

As part of this tool, the region's three local governments would adopt enhanced disclosure provisions for real estate transactions in areas subject to safety issues or noise exposure of 65 dB or higher. This tool responds to recently-enacted State legislation requiring this disclosure for all residential property transactions in the AICUZ (see Appendix 3). The jurisdictions

would also work with the real estate community to educate members on the importance of early disclosure and seek endorsement of the recommendation itself.

A typical weakness of many disclosure procedures is that notice comes late in the decision-making process when individuals may have less flexibility to withdraw offers and when extensive paperwork can obscure the importance of information on certain property conditions. To ensure full and effective disclosure, local jurisdictions would work with the real estate community to develop standard language on noise and other possible operational impacts. This would result in a requirement to release this information at the earliest possible point of interaction between the realtor/real estate agent and the interested buyer/renter, such as the initial advertisement or listing of the affected property (e.g., Multiple Listing Service database). As part of this strategy, local governments would also work with real estate representatives to ensure compliance with disclosure provisions.

10. **Consult with the Navy on the siting of future schools around existing airfields.**

To ensure coordination on the critical issue of school sitings, all jurisdictions within the Hampton Roads region would consult with Navy representatives on the proposed placement of new educational facilities in the vicinity of the NAS Oceana, NALF, and Chambers Field. While the Navy cannot supersede the land use planning authority of local government entities, early coordination on siting options allows decision-makers to understand the likely noise exposure and safety risks associated with placement of a school near an airfield.

11. **Educate public on existing airfield noise and safety ordinances and restrictions in place to reduce air operations impacts.**

Continued public education is necessary to educate and remind Hampton Roads citizens of noise and safety restrictions in place to reduce impacts from Navy air operations. The full range of tools included in existing ordinances would be part of this public education process, including early disclosures, required sound attenuation measures, and land use, height and other restrictions on development. In addition, jurisdictions would educate members of the public on other activities which impair pilot vision, including, but not limited to, lights, smoke, and uses attracting waterfowl. Planners would inform prospective developers/land owners of these restrictions and other activities on parcels in the AICUZ negatively affecting air operations to encourage more compatible land use proposals.

5.3 Navy

The JLUS identifies the following communication, policy, acquisition, and military operations tools for the Navy (See Table 5.2).

1. **Continue to expand educational outreach efforts.**

One of the most effective means for strengthening the relationship between the Navy and its civilian neighbors is to help people understand how the military operates and why it generates certain impacts on surrounding areas.

The Navy currently offers a comment form that can be submitted electronically from its web site and also clearly identifies contact information for the community planning liaison office. A Flight Operations Information page from the web site provides a schedule of Routine Flight Operations activities and links to a separate AICUZ web site covering topics, such as noise, land use, and safety.

To support communications and information approaches to encroachment reduction, the Navy would continue to improve public communication through its outreach program to include re-establishing the Community Leaders Forum; updated and expanded noise mitigation procedures which are currently in place; education on the role of NAS Oceana, NALF Fentress, and Chambers Field in the Navy; the role of the Navy in the regional economy; and an updated brochure/map with detailed information on AICUZ and operational impacts. Advertising and promotion of these comment opportunities should be increased.

2. **Strictly enforce existing easement restrictions around NAS Oceana and NALF Fentress.**

The Navy currently holds development easements on some parcels surrounding NAS Oceana and NALF Fentress. The easements restrict development on the encumbered property to ensure compatibility with naval air operations. In conjunction with the JLUS effort, the Navy has begun a process of notifying affected property owners and conducting a survey to determine compliance with easement conditions. As part of this tool, the Navy would actively enforce development restrictions on existing easements to maintain compatibility around the airfields. The Navy would also coordinate with surrounding governments to ensure that all restricted properties are clearly identified and that easement conditions are enforced throughout all local planning and development approval activities.

3. **Pursue development of an additional Outlying Landing Field in North Carolina.**

Though its development is contingent on authorization and funding from other Federal entities, the Navy would pursue an Outlying Landing Field in North Carolina as a strategic addition to current Navy facilities. The ability to accommodate additional flight training activities at a site outside of developed areas in the Hampton Roads region would alleviate impacts around NAS Oceana and NALF Fentress.

4. **When feasible, modify flight operations to minimize impacts on Hampton Roads developed areas.**

Under this tool, the Navy would explore technically feasible modifications to flight operations and reduce flight activities over developed areas of Hampton Roads to the minimum levels necessary to support a viable military mission. The Navy would also advance operational strategies by educating the public about previous changes in training activity that reduced noise and safety impacts on surrounding areas.

5. **Pursue conservation opportunities in the DoD Easement Partnership Program.**

In 2002, Congressional legislation (Agreements to Limit Encroachments and Other Constraints on Military Training, Testing, and Operations) granted authority to the Department of Defense to partner with local governments and conservation organizations. The DoD may use this authority to assist in acquiring land near military bases when the acquisition can protect both the environment and the military mission.

The Navy can capitalize on this additional acquisition strategy by pursuing available funding opportunities within the DoD Encroachment Partnership Program. Establishing partnerships among the military and local, state, and non-profit entities would enable a quick and effective response when priority real estate acquisition opportunities emerge and can leverage the Navy's existing encroachment prevention efforts.

5.4 The City of Norfolk

The JLUS identifies the following land use and policy tools for the City of Norfolk (See Table 5.3).

1. **Expand the existing Airport Safety Ordinance.**

The City of Norfolk currently addresses safety and height restrictions in the vicinity of Norfolk International Airport and Chambers Field through the use of Accident Potential Zones and language based on FAA height guidance. As part of this land use strategy, the City would establish new development controls regarding compatible land uses in noise zones and APZs around Chambers Field. The Overlay District would retain the baseline zoning but limit increased residential densities in compliance with OPNAV guidance, where compatible with existing land uses. The District would also require disclosure for real estate transactions and sound attenuation for new residential construction in noise exposed areas.

2. **Establish a Voluntary Property Acquisition Program.**

In pursuing an acquisition approach to encroachment reduction, the City of Norfolk would establish a Voluntary Property Acquisition Program. The program would allow the City to acquire, as available Federal or other resources permit, the fee simple purchase from willing sellers of existing properties within the Clear Zones of Chambers Field. Acquisition of these properties would create a land buffer around active military runways and protect public safety by enabling relocations to areas outside of high accident potential.

5.5 The City of Chesapeake

The JLUS identifies the following land use and policy tools for the City of Chesapeake (See Table 5.4).

1. **Revise existing Cluster Zoning Ordinance to recognize those portions of a parcel within noise and safety zones as prime candidates for clustering development.**

The City of Chesapeake has adopted a Cluster Zoning Ordinance intended to maintain undeveloped land, give greater flexibility in site design, and permit multiple development options that accommodate the individual features of properties. Clustering can be an effective tool in promoting land use compatibility around military installations, particularly on larger parcels that straddle an AICUZ boundary.

Conventional zoning typically spreads housing units evenly across a parcel regardless of landscape context. As part of a cluster zone, in contrast, developers must separate the developable areas of the parcel from environmentally sensitive areas. The zone allows more compact lots in the developable portion of the site in exchange for the permanent protection of site land with conservation value. Cluster subdivisions are usually intended to protect landscape features, such as water bodies, wetlands, wildlife habitat, scenic views, and historic sites.

To ensure that this land use tool can effectively reduce future development impacts around NALF Fentress, the City of Chesapeake would implement a revised provision of Cluster Zoning Ordinance that recognizes those portions of a parcel within an AICUZ as prime candidates for the application of clustering. This particular application of cluster zoning would set aside areas subject to noise and safety constraints and allow denser, but compatible, development in areas outside of noise and hazard zones.

2. **Implement Comprehensive Plan that supports an integrated set of rural preservation planning policies.**

In its recently approved Comprehensive Plan, the City of Chesapeake identified a series of policies intended to protect rural areas, including the Open Space and Agriculture Preservation Program, a Cluster Zoning and Cluster Subdivision Ordinance, rural design guidelines, and Level of Service standards. Since NALF Fentress is within a rural area, the City of Chesapeake could pursue an effective policy strategy of encroachment reduction by implementing the Comprehensive Plan's cohesive approach to rural preservation.

3. **Expand the Fentress Overlay District to recognize the potential land use conflicts resulting from noise exposure of 65 dB or higher.**

Currently, the City of Chesapeake's Fentress Overlay District regulates land uses for installation compatibility within the 75 dB or higher noise zone. Under this land use strategy, Chesapeake would expand land use controls to those properties exposed to average noise levels between 65 dB and 75 dB. This additional layer of development regulation would retain existing zoning within the 65 DNL to 75 DNL noise contours, but would include certain appropriate provisions of the existing Fentress Overlay District in the expanded area, as well as other appropriate provisions such as noise attenuation standards, as permitted by State Law. The City would also continue to regulate property within the 75 dB or higher noise zone in accordance with the OPNAV instruction.

4. **Establish an avigation easement program.**

An avigation easement is a land use tool that allows property owners to develop land in accordance with the applicable zoning district but provides the military a clear property right to maintain flight operations over the affected parcel. The easement runs in perpetuity with the deed to the property and protects against lawsuits for military-related operational impacts. This type of easement is being increasingly used to protect military air operations in airfields adjacent to developing areas.

In using this tool, the City of Chesapeake would establish an avigation easement program in noise and safety affected areas. The program would permit the City to make avigation easements available as a voluntary option to developers during proffer or other special permitting processes. The City would offer this easement as a positive element in considering the applicable permitting decision, where necessary. The City would also enforce the easement, ensuring that air rights above new developments with the easement are maintained. A sample easement that was developed for properties around NAS Pensacola in Florida is included in Appendix 4 for reference purposes.

5.6 The City of Virginia Beach

As part of this JLUS, the City of Virginia Beach has conducted a number of public meetings and worked extensively with the Navy to develop policies responding to Navy air operations at NAS Oceana and NALF Fentress. In February 2005, a Sub-Committee was established by the JLUS Policy Committee specifically to deal with AICUZ and noise issues in the City, primarily around Oceana. This section of the report documents recommendations put forward by this Sub-Committee in March 2005 along with planning policies and land use provisions developed by City planning officials. These recommendations, incorporated herein as JLUS recommendations for Virgina Beach, include the following::

- Statement of Understanding between the City of Virginia Beach and U.S. Navy
- Related City of Virginia Beach Planning Provisions
- Proposed Framework for an AICUZ Overlay Ordinance

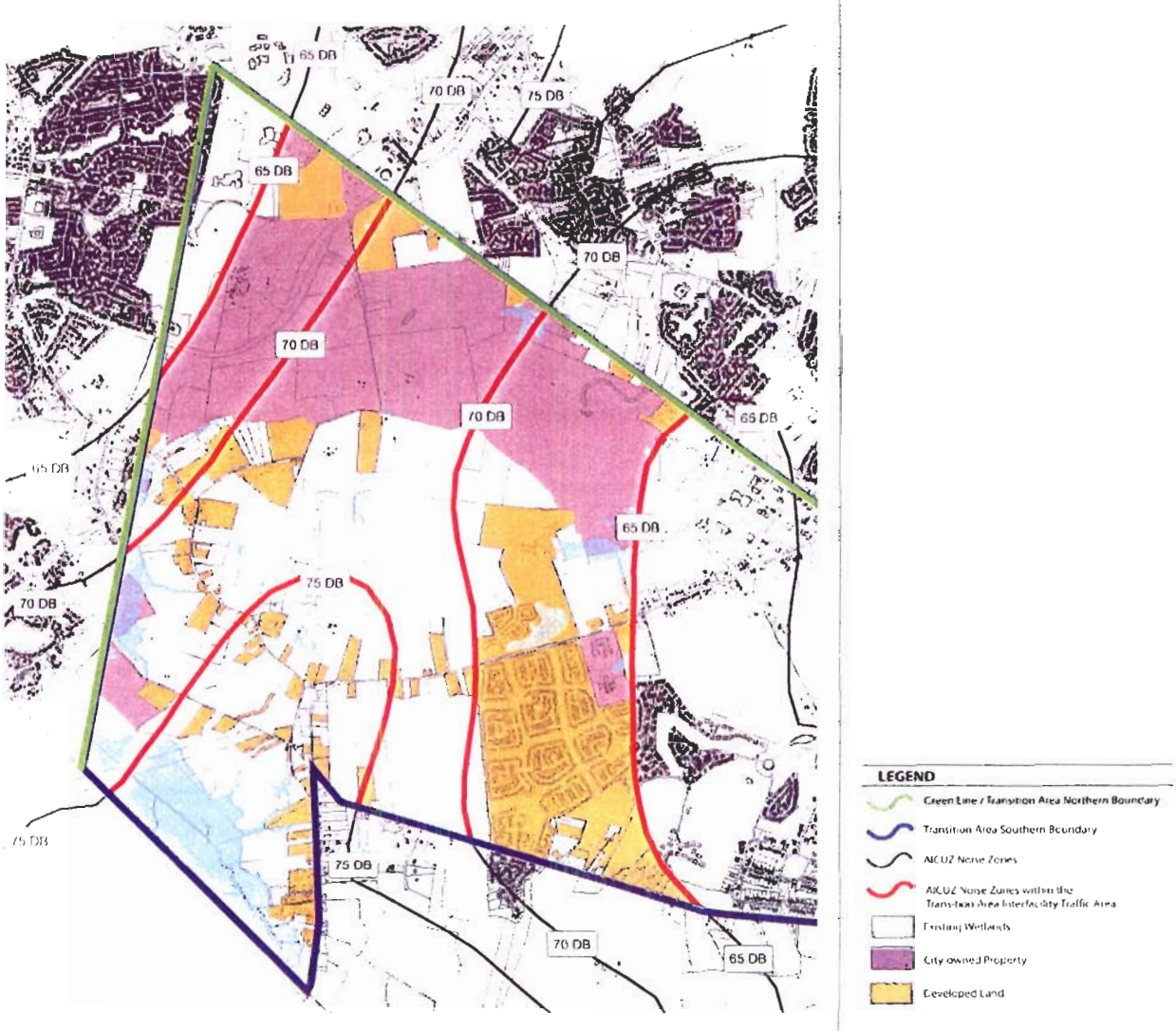
Each of these is summarized below. The Statement of Understanding is provided in complete form in Appendix 5.

Statement of Understanding between the City of Virginia Beach and the U.S. Navy

This statement provides a complete and detailed description of AICUZ-related understandings and actions by both parties (reference Appendix 5). A summary of proposed City actions included in this statement is provided as follows:

- The City would create a new process for Navy officials to review and comment earlier in the process on all proposed development that might encroach on NAS Oceana.
- The City would ask any person or organization proposing development that might be incompatible with the Navy's AICUZ guidelines to meet with Navy officials to discuss alternatives.
- The City would consider fundamental changes in the zoning ordinance to substantially reduce the number of residential units allowed by current zoning in the Resort Area.
- The City would adopt a Zoning Overlay District in all noise zones greater than 65 dB DNL to help prevent encroachment at NAS Oceana.
- The City would recognize the importance of NAS Oceana's Interfacility Traffic Area (i.e., the corridor of land underneath the flight path between NAS Oceana and NALF Fentress; see Figure 5.1) in the City's Transition Area by:
  - Retaining agricultural zoning of one residential lot per 15 acres in the highest noise zone, 75 dB DNL and above;
  - Amending the Comprehensive Plan to retain agricultural zoning with residential density not to exceed one dwelling per five acres in the 70-75 dB DNL noise zone, as allowed by a conditional use permit; and
  - Limiting density to one dwelling per acre in the 65-70 dB DNL noise zone.
- Based on legislation passed by the General Assembly at the request of the City, sound attenuation laws would be expanded to certain non-residential uses and disclosures of noise and/or accident potential zones would be improved for the sale or lease of residential units.
- The City would initiate a working group with NAS Oceana to work with the Virginia Real Estate Board to review, and possibly revise, all disclosures currently in use for noise and/or accident potential zones and determine where disclosures might be needed where none are used now.

Figure 5.1 City of Virginia Beach Interfacility Traffic Area



Source: City of Virginia Beach Planning Department, April 2005

- The City would recognize the Navy's significant concern about the impact of future development on transportation needs by agreeing to keep the Navy effectively involved in such planning processes.
- The City would continue to include the Navy as a vital stakeholder in revising the Oceanfront Resort Area Concept Plan (see Figure 5.2).
- The City would strengthen its working relationship with the Navy and create an ongoing, open dialogue to address the Navy's concerns about potential encroachment at NAS Oceana.

Related City Planning Provisions

In addition to the Statement of Understanding developed by the JLUS Sub-Committee and the proposed AICUZ Overlay Ordinance proposed by the City, the JLUS identifies the following land use and policy tools for the City of Virginia Beach (see Table 5.5).

1. **Establish a Virginia Beach Re-development Strategy as part of the Comprehensive Plan and other land use policies.**

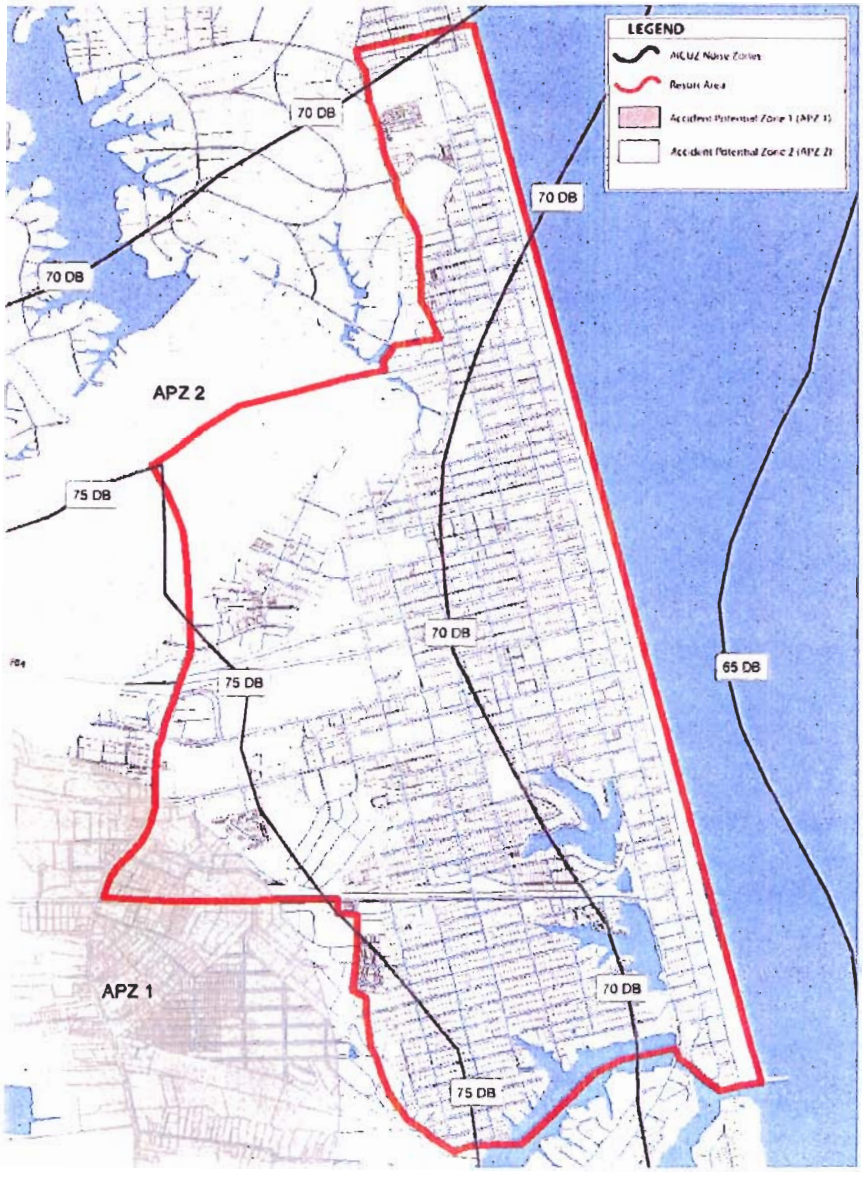
Local governments can reduce development pressure on undeveloped land around airfields by promoting growth in existing built-up areas of the community away from the airfield. As part of this strategy, the City of Virginia Beach has identified in its adopted Comprehensive Plan certain Strategic Growth Areas that may be revitalized using a series of voluntary, incentive-based tools to guide growth to these areas. Examples of measures to spark private investment in designated redevelopment areas could include:

- government investments in infrastructure and the public realm
- tax incentives
- low interest loans
- density bonuses
- fast-track permit approval

A policy emphasis that encourages the re-use of land and the filling in of spaces around built areas relieves some of the future development pressure on undeveloped land around NAS Oceana. Before initiating this strategy, the City would conduct a campaign of public involvement regarding the goals of redevelopment. One of the objectives would be to improve the compatibility of land uses within AICUZ areas.

It is also important to note that the policies of the City's adopted Comprehensive Plan recognize that established residential neighborhoods

Figure 5.1 City of Virginia Beach Resort Area



Source: City of Virginia Beach Planning Department, April 2005

in the City will be protected against intrusive land uses that destabilize them.

2. **Pursue purchase of impacted properties in the > 70 dB DNL area of the Transition Area for Open Space.**

Under this strategy, the City would assemble available funding from Federal, State and local sources to purchase land from **willing** sellers in noise zones greater than 70 dB DNL in the Transition Area to designate as public open space. This strategy would reduce the potential for future incompatible uses in this area while compensating the property owners willing to participate in such a program.

Purchase arrangements could include fee simple sales at fair market value or the purchase of development rights from willing sellers. With the purchase of development rights, land ownership remains private and land owners may continue use of the land for those activities, such as agriculture or recreation, that require minimal development and maintain compatibility with airfield operations. The local government or a partnering non-profit agency then holds the conservation easement, which restricts development on the land in perpetuity.

3. **Expand or modify land acquisition and protection programs in the Transition Area.**

Using environmentally sensitive open land located within the AICUZ noise and safety zones as a guide, the City would investigate means of acquiring additional parcels for designation conservation areas and public open space. Previous studies identifying many of these lands would serve as guides in prioritizing acquisition of parcels (e.g., the SWAMP study described in Section 3.2). Lands identified for wetlands mitigation purposes related to the proposed Southeastern Parkway and Greenbelt would also be considered as potential AICUZ conservation areas. Targeting existing open space within the sensitive areas for protection would preclude future incompatible development within the AICUZ zones.

Because of increasing potential noise conflicts, lands with conservation potential within the flight corridors between Oceana and Fentress in the Transition Area (see Figure 5.1) would be a priority for future purchase and protection. Funds from existing Open Space, Agricultural Reserve or other programs could be targeted for these land and conservation purchases.

4. **Seek Federal funding to purchase conservation lands.**

To further promote conservation options and reduce future incompatible land uses, the City of Virginia Beach would pursue Federal funding to purchase conservation lands in the AICUZ. With new funding available through the Encroachment Partnering Program (EPP), the Navy is a potential partner for funding sources that meet the dual purpose of environmental protection and buffering military operations. Other potential Federal funding sources for conservation purposes are identified in Appendix 6.

5. **Establish an avigation easement program.**

As described above for Chesapeake, the City of Virginia Beach would establish an avigation easement program in noise and safety affected areas. The program would protect air rights and be available as a voluntary option to developers during proffer or other special permitting processes for properties being considered for development in the AICUZ. A sample easement that was developed for properties around NAS Pensacola in Florida is included in Appendix 3 for reference purposes.

Proposed Framework for AICUZ Overlay Ordinance

City of Virginia Beach planning officials have developed an initial framework for additional land use regulations for properties in the AICUZ Noise Zones. This framework is proposed as an AICUZ Overlay District Ordinance that would only be established following a public review process and subject to Planning Commission review and City Council approval subsequent to this JLUS planning effort. This Overlay District proposal is summarized below and listed in Table 5.5.

Purpose: To provide a framework for further discussion concerning the specific means to accomplish the overall objective of protecting the public health, safety and welfare and to prevent encroachment from degrading the operational capability of local military installations in meeting national security needs. This proposal contemplates the adoption of land use regulations that allow reasonable land use compatible with noise levels and accident potential associated with flight operations at NAS Oceana.

Summary: The City will establish an AICUZ Overlay District in all Noise Zones other than < 65 dB DNL (per 1999 AICUZ Map).

- The Overlay District regulations will apply in all underlying zoning districts within the Overlay. Where the Overlay District regulations conflict with the regulations of the underlying zoning district, the Overlay District regulations would control.
- Overlay to be comprised of same areas that are on the 1999 AICUZ Map, except Noise Zone < 65 dB DNL (i.e., in Noise Zones 65-70, 70-75, > 75 dB DNL and Clear Zone, Accident Potential Zone 1 and Accident Potential Zone 2). In addition, there would be special provisions applicable in the portions of the Interfacility Traffic Area that are in Noise Zones of greater than 70 dB DNL and in the Resort Area as areas presenting special considerations.

In general, the regulations of the Overlay District would be the least restrictive in the lowest Noise Zones and graduate to more restrictive levels in high noise zones, with greatest restrictions being in the Accident Potential Zones and Clear Zones. With certain exceptions, the restrictions would generally correspond with the guidelines set forth in Table 2, *Suggested Land Use Compatibility in Noise Zones* and Table 3, *Suggested Land Use Compatibility in Accident Potential Zones* of OPNAV Instruction 11010.36B.

The Navy and the City agree that, under the OPNAV instructions, residential development in areas of 65 dB DNL and greater is not compatible with airfield operations.

The Navy disagrees with allowing any further incompatible development. However, the Overlay Ordinance would neither restrict the uses of property that are allowed 'by-right' per the City Zoning Ordinance nor restrict the uses of property in the 65-70 dB DNL Noise Zone.

Sound attenuation would be required everywhere in the AICUZ Overlay District (i.e., in all Noise Zones >65 dB DNL) for all residential development and for certain non-residential uses within the following use groups:

- Assembly (churches, movie theaters, bars, restaurants, bowling alleys, etc.);
- Business (banks, barber shops, car showrooms, professional offices, etc.);
- Educational (schools through 12th grade);
- Institutional (hospitals, day care, nursing homes, etc.); and

- Mercantile (department stores, drug stores, grocery stores, etc.)

The AICUZ Overlay Ordinance provisions would apply to development in the 70-75 and >75 dB DNL Noise Zones that requires approval by the City Council (i.e., rezonings & conditional use permits). Discretionary development (i.e., needing a rezoning or conditional use permit) would be allowed only if:

- it is compatible or conditionally compatible with the AICUZ recommendations in Table 2 (noise zones) and/or Table 3 (APZs) of OPNAV Instruction 11010.36B; or
- if not compatible or conditionally compatible, such development would be allowed only if the City Council makes a finding that no other reasonable development options that are compatible with the AICUZ recommendations in Table 2 and/or Table 3 exist.

In such cases, development must be at the lowest reasonable density or intensity, as determined by the City Council.

Special Areas:

Within the western portion of Transition Area also known as the Interfacility Traffic Area (see Figure 5.1), the following provisions would apply:

- 65-70 dB DNL Noise Zone: Current zoning and Comprehensive Plan provisions retained;
- 70-75 dB DNL Noise Zone: Residential development requiring City Council approval, (i.e., rezoning or by conditional use permit) allowed at a density no greater than one (1) dwelling unit per five (5) acres of developable land.
- >75 dB DNL Noise Zone: Residential development limited to one (1) dwelling unit per fifteen (15) acres of developable land unless the City Council determines that such density is unreasonable and that no other use (non-residential) is reasonable. In such a case, allowed density would be the minimum reasonable density.
- Where the subject property lies within more than one Noise Zone, dwelling units must be located in lower Noise Zones if practicable.

Within the Resort Area, the following provisions would apply:

- The total number of residential units will not exceed the aggregate number of units allowed under current zoning. The City will endeavor to work with all stakeholders to reduce the number of residential units

significantly below that number through zoning ordinance amendments.

- The Navy shall be among the stakeholders involved in the revision of the Oceanfront Resort Area Concept Plan dated June 28, 1994.

The AICUZ Overlay regulations represent the City's best efforts to balance the needs of the Navy in fulfilling its mission with the rights of citizens to make reasonable use of their property. The City has given careful consideration to both points of view and, to the extent possible, has crafted the Overlay regulations to serve both the needs of the Navy and the rights of property owners. While the regulations do not - and legally may not - eliminate all further development that is incompatible with the AICUZ program, they represent a significant increase in the extent to which AICUZ – related considerations govern land use decisions in Virginia Beach. The regulations will also ensure that, in cases in which incompatible development is approved by the City Council,:

- it will be at the lowest reasonable density, and
- appropriate sound attenuation measures will be required.

The overall effect of the application of the Overlay regulations will be to bring the City's development policies into a much higher degree of conformity with the Navy's AICUZ program than they ever have been, even under the prior OPNAV Instruction.

Table 5.1 Future Noise / Land Use Policies : Regionwide

Topic	Proposed Tools	Definition	Purpose/Intent	Action Steps	Implementation Responsibility
Communications/Information	Improve communications through updated web sites	Provide JLUS information and any other relevant AICUZ or related land use/noise conflicts information on jurisdictions' websites. Update information on a regular basis.	To ensure public education of regional agreements resulting from current and future JLUS efforts, as well as related AICUZ topics	Continue to update/expand websites of regional jurisdictions	Jurisdictions (in cooperation with Navy)
	Request FAA briefing on possible application of FAR Part 150	FAA Part 150 may have noise impact mitigation and other measures applicable to Navy airfields. Request FAA to provide briefing in potential applications for HR jurisdictions.	To better understand FAA requirements as applicable to Navy airfield and air ops in HR	City of Virginia Beach to contact FAA and take lead in scheduling briefings	FAA and Jurisdictions (Virginia Beach)
	Strengthen public education regarding safety and noise restrictions in existing Airport Noise Ordinances	Educate public on existing AICUZ policy which recognizes noise, safety, height, land use and other restrictions around military airfields	Provide clear disclosure of noise and safety impacts around military airfields to potential developers	Jurisdiction planning and public affairs departments to prepare and distribute information as appropriate	Jurisdictions
Coordination/Organizational	Create JLUS Regional Coordinating Committee to include the Peninsula's military facilities and local governments	Multi-stakeholder committee which will continue dialogue and monitoring of JLUS recommendations and future land use impacts	Ensure communication between stakeholders and encourage future land use decision-making consensus	Select subset of reps from JLUS Work/Policy groups to continue working together on future issues	HRPDC, Jurisdictions, Navy, Army, Air Force, Coast Guard
Planning and Public Policy	Seek Navy input on school siting boards/ decisions	Consult Navy on school siting decisions to review future school sitings in all three jurisdictions	Allow Navy to review and provide input on future siting of schools	City School Boards and Navy approval	Jurisdiction School Boards, Navy
Real Estate Disclosure	Early real estate disclosure	Disclosure of structure's location within AICUZ noise zones and/or within APZs at the initial advertisement of property (e.g., Multiple Listing Service database). Ensure early disclosure is being followed and educate agents of proper language/timing.	Provide honest disclosure of impacts to property within AICUZ which may impact buyer or renter decision to pursue it	Work with VA Real Estate Board and Real Estate reps to develop and implement language for inclusion in disclosure notices	Jurisdictions, VA Real Estate Board, HR Realtors Association, HR Assoc. of Commercial Real Estate
Sound Attenuation	Strengthen building codes	Modify existing STC ratings for sound attenuation to higher levels based on application by other jurisdictions; tier application of expanded codes according to noise contours	Provide additional sound attenuation for residences & other buildings within AICUZ	Conduct research of other building codes; Discuss action with State legislature reps, investigating specific legislation for Hampton Roads only	Jurisdictions, State Representatives in Legislature, Navy
	Strengthen building codes of schools in noise contours	Improve sound attenuation of school structures based on applications by other jurisdictions	Provide additional sound attenuation for schools within AICUZ	Conduct research of other building codes; Discuss action with State legislature reps, investigating specific legislation for Hampton Roads only	Jurisdictions, State Representatives in Legislature
	Implement noise attenuation requirements- for certain non-residential structures	Conduct research to implement recently-enacted state legislation enabling Hampton Roads communities ability to require noise attenuation for certain non-residential noise-sensitive structures (churches, office buildings, hospitals, etc.)	Provide interior sound attenuation for non-residential noise-sensitive structures in high noise zones	Conduct research of other building codes; work with appropriate national and state agencies on revisions to Virginia Uniform Statewide Building Code	Jurisdictions, VA Board of Housing & Community Development
	Ensure building code enforcement	Ensure contracted builders are following increased standards in noise contours	Prevent structures from being built within noise contours that do not meet higher sound attenuation standards	Review & educate as needed code compliance (specifically sound attenuation measures) with building inspectors; work with building industry & developer reps on compliance methods & technologies	Jurisdictions, Tidewater Building Association
	Building code R&D in Hampton Roads	Promote research and development on new methods of sound attenuation through construction and building materials	Use highly impacted areas as research grounds for improving overall construction standards for all impacted structures	Jurisdictions work with Tidewater Building Association, schools and other building industry reps to develop research partnerships & initiate sound attenuation R&D programs	Jurisdictions, Tidewater Building Assoc., Local Educational Institutions, Local/National Building Material Retailers

Table 5.2 Future Noise / Land Use Policies : Navy

Topic	Proposed Tools	Definition	Purpose/Intent	Action Steps	Implementation Responsibility
Communications/Information	Improve Navy communications through updated web sites and hotline response	Improvement of communication methods of Navy activities to public	Ensuring public education of Navy activities and response to community concerns	Navy continue to update web site of current activities and improve response to noise complaints	Navy (in cooperation with jurisdictions)
	Update educational materials explaining noise, AICUZ, and real estate disclosure	New brochures (with AICUZ maps) discussing specifics of noise contours, AICUZ, and Navy operations	Increase operational understanding of public	Assemble and print brochures and distribute to HR regional realtors	Navy
Planning and Public Policy	Enforce development restrictions on existing easements	Enforce development restrictions on existing easements to ensure AICUZ compatible development around airfields	Better control development restrictions on existing easements	Review all easements and work with jurisdictions to enforce restrictions	Navy (in cooperation with jurisdictions)
	Pursue OLF in North Carolina	Pursue additional Outlying Field to allow additional flight training in undeveloped areas outside of Hampton Roads	To potentially reduce required flight training at HR airfields	Required Federal, state and local approvals	Navy, DOD, Congressional representatives
Acquisition	Pursue funding for DoD Conservation Land Purchase	Partnerships with local, state, and non-profit conservation entities to acquire land around military installations to prevent further encroachment	Enable quick response to priority real estate acquisition opportunities and leverage Navy's encroachment prevention efforts.	Research local, state, and non-profit funding sources	Navy, DOD, Jurisdictions, partner entity
Air Operations/Training	Flight Ops modifications	Implement/continue all flight ops modifications feasible to reduce air ops to minimal feasible to support mission over HR developed areas (e.g., NAS Oceana Course Rule Changes implemented 3/1/04)	To minimize noise/safety impacts on developed areas around Navy airfields; educate public on previous changes	CO approval, Flight Squadron implementation	Navy

Table 5.3 Future Noise / Land Use Policies : City of Norfolk

Topic	Proposed Tools	Definition	Purpose/Intent	Action Steps	Implementation Responsibility
Land Use Regulations	Expand/Modify Airport Safety Overlay District	Expand/modify existing Overlay District to encourage AICUZ-compatible development in addition to those present in the baseline zoning classification. The Overlay District cannot prohibit any development allowed under the baseline classification. District is created around boundaries of noise contours and safety areas.	Allow AICUZ-compatible development in AICUZ noise zones greater than 65 DNL, subject to individual case review to ensure that any proposed use is compatible with the surrounding area and does not improperly burden the existing city infrastructure and services.	City Council and Planning Commission approval	Jurisdiction
Acquisition	Establish a Voluntary Property Acquisition Program	Implement program, as determined feasible, to acquire existing properties within Clear Zones of Chambers Field	To provide land buffer around active military runways, protecting public safety through relocations outside areas of high crash potential	Research DoD/Federal/other funding sources	Jurisdiction

Table 5.4 Future Noise / Land Use Policies : City of Chesapeake

Topic	Proposed Tools	Definition	Purpose/Intent	Action Steps	Implementation Responsibility
Planning and Public Policy	Revise ordinance regarding clustering provisions	Implement revision of ordinance to encourage AICUZ-compatible clustering of density	Where feasible, allow flexibility to cluster development outside of noise zone to prevent non-compatible development in AICUZ	City Council and Planning Commission approval	Jurisdiction
Land Use Regulations	Expand Fentress Overlay District within existing Zoning Ordinance	Include land use restrictions on lands within APZs and all noise contours rather than primarily 75+ DNL	Expand land use controls within impacted area to promote compatible development in AICUZ	City Council and Planning Commission approval	Jurisdiction
	Implement Comprehensive Plan to support integrated preservation planning policies	Implement Comprehensive Plan to synchronize the City's rural preservation efforts which control development densities in the AICUZ	Implement coordination of various ordinances, policies, and programs that achieve a cohesive rural preservation strategy encouraging low density development around NALF Fentress	City Council and Planning Commission approval	Jurisdiction
Acquisition	Establish Avigation Easement Program	Create program for jurisdiction to offer avigation easements as part of proffer or other special permitting processes for proposed new development in the AICUZ	Increased protection against lawsuits for military operation-related impacts	Jurisdiction including avigation easement in City Council approval process	Jurisdiction

Table 5.5 Future Noise / Land Use Policies : City of Virginia Beach

Topic	Proposed Tools	Definition	Purpose/Intent	Action Steps	Implementation Responsibility
Planning and Public Policy	Establish a Redevelopment Strategy	Advance public understanding of redevelopment options and create voluntary and incentive-based tools to affect community goals	Create long-term strategy to guide redevelopment in City which is compatible with military mission	Initiate public dialogue program and then develop a responsive City-wide redevelopment strategy and planning process	Jurisdiction
Land Use Regulations	Revise City Zoning ordinance to include AICUZ Overlay District	Establish AICUZ Overlay District to protect public health, safety & welfare and prevent encroachment that would degrade military operations at Navy airfields (Overlay district to be based on 1999 AICUZ map). Implementation actions to establish District would include appropriate comprehensive plan and related development regulatory changes.	Adopt an AICUZ Overlay District Ordinance to include specific allowances and restrictions in AICUZ Noise Zones and APZs. Intent is to allow reasonable land uses compatible with noise levels and accident potential zones associated with flight operations at NAS Oceana.	Revise Comprehensive Plan, City Zoning Ordinance and other development regulations to adopt overlay ordinance following public review and Planning Commission and City Council review and approval	Jurisdiction
Acquisition	Pursue purchase of impacted properties in the >70 DNL area of the Transition Area for open space	Assemble funding package of state, Federal and local funds to purchase from willing sellers affected property in the > 70 DNL area of the Transition Area to convert to public open space	Reduce number of impacted properties in high noise zones, thus lessening incompatible residential densities	Planning Department research and City Council approval	Jurisdiction (in cooperation with Federal, State and local agencies providing potential funding sources)
	Expand or modify land acquisition/protection programs in the Transition Area	Modify or expand existing Open Space, Agric. Reserve, and other acquisition programs to target funds for acquiring land within defined geographic corridor in Transition Area	Protect key lands in Transition Area from incompatible development through targeted land acquisition	Planning Department research and City Council approval	Jurisdiction
	Seek Federal funding to purchase conservation lands	Working with other Hampton Roads communities, seek Federal funding to purchase conservation lands within AICUZ impacted zones	Provide protection from development for additional open land within noise impacted zones	Research potential Federal funding sources/partnerships; prepare grant applications as applicable	Jurisdiction (in cooperation with Federal agencies providing potential funding sources)
	Establish Avigation Easement Program	Create program for jurisdiction to offer avigation easements as part of proffer or other special permitting processes for proposed new development in the AICUZ	Increased protection against lawsuits for military operation-related impacts	Jurisdiction including avigation easement in City Council approval process	Jurisdiction

Technical Appendix

Appendix 1 - OPNAVINST 11010.36B Land Use Compatibility Tables
Appendix 2 - Sample Noise Reduction Standards for Residential Development (for MCAS Cherry Point, NC region)
Appendix 3 - JLUS-related 2005 Virginia State Legislature Amendments
Appendix 4 - Sample Avigation Easement (for Escambia County, FL)
Appendix 5 - Statement of Understanding between the City of Virginia Beach and the U.S. Navy
Appendix 6 - List of Conservation Funding Opportunities

APPENDIX 1
(Tables excerpted from complete OPNAVINST 11010.36B)

TABLE 2 - AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES

Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 (DNL or CNEL)		Noise Zone 2 (DNL or CNEL)		Noise Zone 3 (DNL or CNEL)		
SLUCM NO	LAND USE NAME	< 55	55- 64	65 - 69	70 -74	75- 79	80 -84	85+
	Residential							
11	Household Units	Y	Y [1]	N [1]	N [1]	N	N	N
11.11	Single units: detached	Y	Y [1]	N [1]	N [1]	N	N	N
11.12	Single units: semidetached	Y	Y [1]	N [1]	N [1]	N	N	N
11.13	Single units: attached row	Y	Y [1]	N [1]	N [1]	N	N	N
11.21	Two units: side-by-side	Y	Y [1]	N [1]	N [1]	N	N	N
11.22	Two units: one above the other	Y	Y [1]	N [1]	N [1]	N	N	N
11.31	Apartments: walk-up	Y	Y [1]	N [1]	N [1]	N	N	N
11.32	Apartment: elevator	Y	Y [1]	N [1]	N [1]	N	N	N
12	Group quarters	Y	Y [1]	N [1]	N [1]	N	N	N
13	Residential Hotels	Y	Y [1]	N [1]	N [1]	N	N	N
14	Mobile home parks or courts	Y	Y [1]	N	N	N	N	N
15	Transient lodgings	Y	Y [1]	N [1]	N [1]	N [1]	N	N
16	Other residential	Y	Y [1]	N [1]	N [1]	N	N	N
20	***Manufacturing***							
21	Food & kindred products; manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
22	Textile mill products; manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
23	Apparel and other finished products; products made from fabrics, leather and similar materials; manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
24	Lumber and wood products (except furniture); manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
25	Furniture and fixtures; manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
26	Paper and allied products; manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
27	Printing, publishing, and allied industries	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
28	Chemicals and allied products; manufacturing	Y	Y	Y	Y[2]	Y[3]	Y[4]	N
29	Petroleum refining and related industries	Y	Y	Y	Y[2]	Y[3]	Y[4]	N

TABLE 2 - AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES (Continued)

Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 (DNL or CNEL)		Noise Zone 2 (DNL or CNEL)		Noise Zone 3 (DNL or CNEL)		
SLUCM NO.	LAND USE NAME	< 55	55- 64	65 - 69	70 -74	75- 79	80 -84	85+
30	*Manufacturing (continued)*							
31	Rubber and misc. plastic products; manufacturing	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
32	Stone, clay and glass products; manufacturing	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
33	Primary metal products; manufacturing	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
34	Fabricated metal products; manufacturing	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
35	Professional scientific, and controlling instruments; photographic and optical goods; watches and clocks	Y	Y	Y	25	30	N	N
39	Miscellaneous manufacturing	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
40	*Transportation, communication and utilities.*							
41	Railroad, rapid rail transit, and street railway transportation	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
42	Motor vehicle transportation	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
43	Aircraft transportation	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
44	Marine craft transportation	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
45	Highway and street right-of-way	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
46	Automobile parking	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
47	Communication	Y	Y	Y	25 [5]	30 [5]	N	N
48	Utilities	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
49	Other transportation, communication and utilities	Y	Y	Y	25 [5]	30 [5]	N	N
50	*Trade*							
51	Wholesale trade	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
52	Retail trade - building materials, hardware and farm equipment	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
53	Retail trade - shopping centers	Y	Y	Y	25	30	N	N
54	Retail trade - food	Y	Y	Y	25	30	N	N

TABLE 2 - AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES (Continued)

Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 (DNL or CNEL)		Noise Zone 2 (DNL or CNEL)		Noise Zone 3 (DNL or CNEL)		
SLUCM NO	LAND USE NAME	< 55	55- 64	65 -69	70 -74	75-79	80 -84	85+
50	***Trade (Continued)***							
55	Retail trade - automotive, marine craft, aircraft and accessories	Y	Y	Y	25	30	N	N
56	Retail trade - apparel and accessories	Y	Y	Y	25	30	N	N
57	Retail trade - furniture, home, furnishings and equipment	Y	Y	Y	25	30	N	N
58	Retail trade - eating and drinking establishments	Y	Y	Y	25	30	N	N
59	Other retail trade	Y	Y	Y	25	30	N	N
60	***Services***							
61	Finance, insurance and real estate services	Y	Y	Y	25	30	N	N
62	Personal services	Y	Y	Y	25	30	N	N
62.4	Cemeteries	Y	Y	Y	Y [2]	Y [3]	Y [4,11]	Y [6,11]
63	Business services	Y	Y	Y	25	30	N	N
63.7	Warehousing and storage	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
64	Repair Services	Y	Y	Y	Y [2]	Y [3]	Y [4]	N
65	Professional services	Y	Y	Y	25	30	N	N
65.1	Hospitals, other medical fac.	Y	Y [1]	25	30	N	N	N
65.16	Nursing Homes	Y	Y	N [1]	N [1]	N	N	N
66	Contract construction services	Y	Y	Y	25	30	N	N
67	Government Services	Y	Y [1]	Y [1]	25	30	N	N
68	Educational services	Y	Y [1]	25	30	N	N	N
69	Miscellaneous	Y	Y	Y	25	30	N	N
70	***Cultural, entertainment and recreational***							
71	Cultural activities (& churches)	Y	Y[1]	25	30	N	N	N
71.2	Nature exhibits	Y	Y[1]	Y[1]	N	N	N	N
72	Public assembly	Y	Y[1]	Y	N	N	N	N
72.1	Auditoriums, concert halls	Y	Y	25	30	N	N	N
72.11	Outdoor music shells, amphitheaters	Y	Y [1]	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	Y	Y	Y [7]	Y [7]	N	N	N
73	Amusements	Y	Y	Y	Y	N	N	N
74	Recreational activities (include golf courses, riding stables, water rec.)	Y	Y[1]	Y[1]	25	30	N	N
75	Resorts and group camps	Y	Y [1]	Y [1]	Y [1]	N	N	N
76	Parks	Y	Y [1]	Y [1]	Y [1]	N	N	N
79	Other cultural, entertainment and recreation	Y	Y [1]	Y [1]	Y [1]	N	N	N

TABLE 2 - AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES
(Continued)

Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 (DNL or CNEL)		Noise Zone 2 (DNL or CNEL)		Noise Zone 3 (DNL or CNEL)		
SLUCM NO.	LAND USE NAME	< 55	55- 64	65 -69	70 -74	75-79	80 -84	85+
80	*Resource Production and Extraction*							
81	Agriculture (except live stock)	Y	Y	Y [8]	Y [9]	Y [10]	Y [10,11]	Y [10,11]
81.5,	Livestock farming	Y	Y	Y [8]	Y [9]	N	N	N
81.7	Animal breeding	Y	Y	Y [8]	Y [9]	N	N	N
82	Agriculture related activities	Y	Y	Y [8]	Y [9]	Y [10]	Y [10,11]	Y [10,11]
83	Forestry Activities	Y	Y	Y [8]	Y [9]	Y [10]	Y [10,11]	Y [10,11]
84	Fishing Activities	Y	Y	Y	Y	Y	Y	Y
85	Mining Activities	Y	Y	Y	Y	Y	Y	Y
89	Other resource production or extraction	Y	Y	Y	Y	Y	Y	Y

KEY TO TABLE 2 - SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES

SLUCM	Standard Land Use Coding Manual, U.S. Department of Transportation
Y (Yes)	Land Use and related structures compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
Y* (Yes with Restrictions)	The land use and related structures are generally compatible. However, see note(s) indicated by the superscript.
N^x - (No with exceptions)	the land use and related structures are generally incompatible. However, see notes indicated by the superscript.
NLR (Noise Level Reduction)	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35	The numbers refer to Noise Level Reduction levels. Land Use and related structures generally compatible however, measures to achieve NLR of 25, 30 or 35 must be incorporated into design and construction of structures. However, measures to achieve an overall noise reduction do not necessarily solve noise difficulties outside the structure and additional evaluation is warranted. Also, see notes indicated by superscripts where they appear with one of these numbers.
DNL	Day-Night Average Sound Level.
CNEL	Community Noise Equivalent Level (Normally within a very small decibel difference of DNL)
Ldn	Mathematical symbol for DNL.

NOTES FOR TABLE 2 - SUGGESTED LAND USE COMPATIBILITY IN NOISE ZONES

1.

a) Although local conditions regarding the need for housing may require residential use in these Zones, residential use is discouraged in DNL 65-69 and strongly discouraged in DNL 70-74. The absence of viable alternative development options should be determined and an evaluation should be conducted locally prior to local approvals indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these Zones.

b) Where the community determines that these uses must be allowed, measures to achieve and outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB in DNL 65-69 and NLR of 30 dB in DNL 70-74 should be incorporated into building codes and be in individual approvals; for transient housing a NLR of at least 35 dB should be incorporated in DNL 75-79.

c) Normal permanent construction can be expected to provide a NLR of 20 dB, thus the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation, upgraded Sound Transmission Class (STC) ratings in windows and doors and closed windows year round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.

d) NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, design and use of berms and barriers can help mitigate outdoor noise exposure NLR particularly from ground level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.

2. Measures to achieve NLR of 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

3. Measures to achieve NLR of 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

4. Measures to achieve NLR of 35 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

5. If project or proposed development is noise sensitive, use indicated NLR; if not, land use is compatible without NLR.

6. No buildings.

7. Land use compatible provided special sound reinforcement systems are installed.

8. Residential buildings require a NLR of 25

9. Residential buildings require a NLR of 30.

10. Residential buildings not permitted.

11. Land use not recommended, but if community decides use is necessary, hearing protection devices should be worn.

TABLE 3-AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT POTENTIAL ZONES [1]

SLUCM NO.	LAND USE NAME	CLEAR ZONE Recommendation	APZ-I Recommendation	APZ-II Recommendation	Density Recommendation
10	***Residential***				
11	Household Units				
11.11	Single units: detached	N	N	Y[2]	Maximum density of 1-2 Du/Ac
11.12	Single units: semidetached	N	N	N	
11.13	Single units: attached row	N	N	N	
11.21	Two units: side-by-side	N	N	N	
11.22	Two units: one above the other	N	N	N	
11.31	Apartments: walk-up	N	N	N	
11.32	Apartment: elevator	N	N	N	
12	Group quarters	N	N	N	
13	Residential Hotels	N	N	N	
14	Mobile home parks or courts	N	N	N	
15	Transient lodgings	N	N	N	
16	Other residential	N	N	N	
20	***Manufacturing*** [3]				
21	Food & kindred products; manufacturing	N	N	Y	Maximum FAR 0.56
22	Textile mill products; manufacturing	N	N	Y	Same as above
23	Apparel and other finished products; products made from fabrics, leather and similar materials; manufacturing	N	N	N	
24	Lumber and wood products (except furniture); manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
25	Furniture and fixtures; manufacturing	N	Y	Y	Same as above
26	Paper and allied products; manufacturing	N	Y	Y	Same as above
27	Printing, publishing, and allied industries	N	Y	Y	Same as above
28	Chemicals and allied products; manufacturing	N	N	N	
29	Petroleum refining and related industries	N	N	N	

TABLE 3-AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT POTENTIAL ZONES [1] (Continued)

SLUCM NO.	LAND USE NAME	CLEAR ZONE Recommendation	APZ-I Recommendation	APZ II Recommendation	Density Recommendation
30	***Manufacturing [3] (continued)***				
31	Rubber and misc. plastic products; manufacturing	N	N	N	
32	Stone, clay and glass products; manufacturing	N	N	Y	Maximum FAR 0.56
33	Primary metal products; manufacturing	N	N	Y	Same as above
34	Fabricated metal products; manufacturing	N	N	Y	Same as above
35	Professional scientific, & controlling instrument; photographic and optical goods; watches & clocks	N	N	N	
39	Miscellaneous manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
40	***Transportation, communication and utilities [4].***				See Note 3 below.
41	Railroad, rapid rail transit, and street railway transportation	N	Y[5]	Y	Same as above.
42	Motor vehicle transportation	N	Y[5]	Y	Same as above
43	Aircraft transportation	N	Y[5]	Y	Same as above
44	Marine craft transportation	N	Y[5]	Y	Same as above
45	Highway and street right-of-way	N	Y[5]	Y	Same as above
46	Auto parking	N	Y[5]	Y	Same as above
47	Communication	N	Y[5]	Y	Same as above
48	Utilities	N	Y[5]	Y	Same as above
485	Solid waste disposal (Landfills, incineration, etc.)	N	N	N	
49	Other transport, comm. and utilities	N	Y[5]	Y	See Note 3 below
50	***Trade***				
51	Wholesale trade	N	Y	Y	Maximum FAR of 0.28 in APZ I. & .56 in APZ II.
52	Retail trade - building materials, hardware and farm equipment	N	Y	Y	Maximum FAR of 0.14 in APZ I & 0.28 in APZ II

TABLE 3-AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT POTENTIAL ZONES [1] (Continued)

SLUCM NO.	LAND USE NAME	CLEAR ZONE Recommendation	APZ-I Recommendation	APZ-II Recommendation	Density Recommendation
50	***Trade (Continued)***				
53	Retail trade - shopping centers	N	N	Y	Maximum FAR of 0.22.
54	Retail trade - food	N	N	Y	Maximum FAR of 0.24
55	Retail trade - automotive, marine craft, aircraft and accessories	N	Y	Y	Maximum FAR of 0.14 in APZ I & 0.28 in APZ II
56	Retail trade - apparel and accessories	N	N	Y	Maximum FAR 0.28
57	Retail trade - furniture, home, furnishings and equipment	N	N	Y	Same as above
58	Retail trade - eating and drinking establishments	N	N	N	
59	Other retail trade	N	N	Y	Maximum FAR of 0.22
60	***Services*** [6]				
61	Finance, insurance and real estate services	N	N	Y	Maximum FAR of 0.22 for "General Office/Office park"
62	Personal services	N	N	Y	Office uses only. Maximum FAR of 0.22.
62.4	Cemeteries	N	Y[7]	Y[7]	
63	Business services (credit reporting; mail, stenographic, reproduction; advertising)	N	N	Y	Max. FAR of 0.22 in APZ II
63.7	Warehousing and storage services	N	Y	Y	Max. FAR 1.0 APZ I; 2.0 in APZ II
64	Repair Services	N	Y	Y	Max. FAR of 0.11 APZ I; 0.22 in APZ II
65	Professional services	N	N	Y	Max. FAR of 0.22
65.1	Hospitals, nursing homes	N	N	N	
65.1	Other medical facilities	N	N	N	
66	Contract construction services	N	Y	Y	Max. FAR of 0.11 APZ I; 0.22 in APZ II
67	Government Services	N	N	Y	Max FAR of 0.24
68	Educational services	N	N	N	
69	Miscellaneous	N	N	Y	Max. FAR of 0.22

TABLE 3-AIR INSTALLATIONS COMPATIBLE USE ZONES
SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT POTENTIAL ZONES [1] (continued)

SLUCM NO.	LAND USE NAME	CLEAR ZONE Recommendation	APZ-I Recommendation	APZ-II Recommendation	Density Recommendation
70	***Cultural, entertainment and recreational***				
71	Cultural activities	N	N	N	
71.2	Nature exhibits	N	Y[8]	Y[8]	
72	Public assembly	N	N	N	
72.1	Auditoriums, concert halls	N	N	N	
72.11	Outdoor music shells, amphitheaters	N	N	N	
72.2	Outdoor sports arenas, spectator sports	N	N	N	
73	Amusements - fairgrounds, miniature golf, driving ranges; amusement parks, etc	N	N	Y	
74	Recreational activities (including golf courses, riding stables, water recreation)	N	Y[8]	Y[8]	Max. FAR of 0.11 APZ I; 0.22 in APZ II
75	Resorts and group camps	N	N	N	
76	Parks	N	Y[8]	Y[8]	Same as 74
79	Other cultural, entertainment and recreation	N	Y[8]	Y[8]	Same as 74
80	***Resource production and extraction***				
81	Agriculture (except live stock)	Y[4]	Y[9]	Y[9]	
81.5, 81.7	Livestock farming and breeding	N	Y[9,10]	Y[9,10]	
82	Agriculture related activities	N	Y[9]	Y[9]	Max FAR of 0.28 APZ I; 0.56 APZ II no activity which produces smoke, glare, or involves explosives
83	Forestry Activities [11]	N	Y	Y	Same as Above
84	Fishing Activities [12]	N[12]	Y	Y	Same as Above
85	Mining Activities	N	Y	Y	Same as Above
89	Other resource production or extraction	N	Y	Y	Same as Above
90	***Other***				
91	Undeveloped Land	Y	Y	Y	
93	Water Areas	N[13]	N[13]	N[13]	

KEY TO TABLE 3 - SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT POTENTIAL ZONES

SLUCM -	Standard Land Use Coding Manual, U.S. Department of Transportation
Y (Yes) -	Land use and related structures are normally compatible without restriction.
N (No) -	Land use and related structures are not normally compatible and should be prohibited.
Y^x - (Yes with restrictions)	the land use and related structures are generally compatible. However, see notes indicated by the superscript.
N^x - (No with exceptions)	the land use and related structures are generally incompatible. However, see notes indicated by the superscript.
FAR - Floor Area Ratio.	A floor area ratio is the ratio between the square feet of floor area of the building and the site area. It is customarily used to measure non-residential intensities.

Du/Ac - Dwelling Units per Acre. This metric is customarily used to measure residential densities.

NOTES FOR TABLE 3 - SUGGESTED LAND USE COMPATIBILITY IN ACCIDENT POTENTIAL ZONES

The following notes refer to Table 3.

1. A "Yes" or a "No" designation for compatible land use is to be used only for general comparison. Within each, uses exist where further evaluation may be needed in each category as to whether it is clearly compatible, normally compatible, or not compatible due to the variation of densities of people and structures. In order to assist installations and local governments, general suggestions as to floor/area ratios are provided as a guide to density in some categories. In general, land use restrictions which limit commercial, services, or industrial buildings or structure occupants to 25 per acre in APZ I, and 50 per acre in APZ II are the range of occupancy levels considered to be low density. Outside events should normally be limited to assemblies of not more that 25 people per acre in APZ I, and maximum assemblies of 50 people per acre in APZ II.

2. The suggested maximum density for detached single-family housing is one to two Du/Ac. In a Planned Unit Development (PUD) of single family detached units where clustered housing development results in large open areas, this density could possibly be increased provided the amount of surface area covered by structures does not exceed 20 percent of the PUD total area. PUD encourages clustered development that leave large open areas.

3. Other factors to be considered: Labor intensity, structural coverage, explosive characteristics, air-pollution, electronic interference with aircraft, height of structures, and potential glare to pilots.

4. No structures (except airfield lighting), buildings or aboveground utility/ communications lines should normally be located in Clear Zone areas on or off the installation. The Clear Zone is subject to severe restrictions. See NAVFAC P-80.3 or Tri-Service Manual AFM 32-1123(I); TM 5-803-7, NAVFAC P-971 "Airfield and Heliport Planning & Design" dated 1 May 99 for specific design details.

5. No passenger terminals and no major above ground transmission lines in APZ I.

6. Low intensity office uses only. Accessory uses such as meeting places, auditoriums, etc. are not recommended.

7. No Chapels are allowed within APZ I or APZ II.

8. Facilities must be low intensity, and provide no tot lots, etc. Facilities such as clubhouses, meeting places, auditoriums, large classes, etc. are not recommended.

9. Includes livestock grazing but excludes feedlots and intensive animal husbandry. Activities that attract concentrations of birds creating a hazard to aircraft operations should be excluded.

10. Includes feedlots and intensive animal husbandry.

11. Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zones will be disposed of in accordance with appropriate DOD Natural Resources Instructions.

12. Controlled hunting and fishing may be permitted for the purpose of wildlife management.

13. Naturally occurring water features (e.g., rivers, lakes, streams, wetlands) are compatible.

APPENDIX 2

SAMPLE NOISE REDUCTION STANDARDS FOR RESIDENTIAL CONSTRUCTION

Source: "Eastern Carolina Joint Land Use Study, Prepared for Craven County, Carter County, City of Havelock, Town of Emerald Isle, Town of Bogue, Town of Atlantic, and MCAS Cherry Point by the Eastern Carolina Council, Region P Council of Governments; November 2002.

Note: Standards may differ by geographic region.

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SOUND INSULATION IN RESIDENTIAL STRUCTURES

DEFINITION

Sound insulation refers to the use of acoustical related building materials for the reduction of noise for architectural abatement purposes. These materials apply to any areas of a structure that may be part of a sound transmission path including windows, doors, roof systems, ventilation, wall systems (exterior), and utility access points through a building envelope.

CHARACTERISTICS

The application of sound insulation techniques can involve existing and/or planned structures or buildings. Often the benefits for noise control, such as double pane windows have additional benefits in terms of energy conservation and reduced heat loss. The primary objective of an airport sound insulation program is to reduce the sound transmission through the building envelope (e.g., exterior wall, window, and roof system), thereby having lower interior noise levels. The implementation of such a program may be the adoption of a building code or performance requirements established by a public agency.

POSITIVE FEATURES

The primary benefit of a sound insulation program is to protect the noise receiver, while they are indoors. Frequently, there are associated benefits of energy conservation when there is building insulation. Such efforts have the flexibility of applying to both existing structures, as well as buildings that will be constructed. Therefore, it can be more comprehensive than a building code. Since building codes generally are applicable only to planned or new structures.

NEGATIVE FEATURES

Sound insulation controls apply directly to a structure. Therefore it does not improve the outdoor environments, when the individual is outside the home. Often times, sound insulation is considered for selected areas or buildings, rather than being a comprehensive approach.

LEGAL STANDING

Sound insulation programs are frequently mandates for certain geographical areas as a policy of a jurisdiction with matching federal and local funds involved. Since a program is adopted by a jurisdiction it does represent legal standing.

Note: Standards may differ by geographic region.

Sound Attenuation ***Definitions***

DNL Day - Night Sound Level:
An average of the cumulative measure of the noise exposure during a 24-hour day.

Exterior Wall Rating:
EWR is a single-number rating for exterior building elements (such as walls, windows, doors, etc.) and represents the effective sound transmission loss capability, in decibels, of each element, It differs from the STC rating in that it is based on aircraft noise rather than office noise spectra. For this reason, EWR is superior to STC for describing the sound-insulating properties of exterior wall elements exposed to aircraft noise. The EWR concept was developed by Wylie Laboratories and has been used extensively in studies of residential sound insulation. It is conceptually similar to the STC rating method. Like TL and SIC, the higher the EWR value, the better the noise reduction.

Noise Reduction:
The quantitative measure of sound isolation between spaces is called Noise Reduction (NR). The NR between two spaces, such as from the exterior to the interior of a dwelling, depends on the TL of the various components in the separating wall, the area of the separating wall, and the acoustical absorption n the receiving room. This value takes more into account than just the sound transmission characteristics of the wall material. Generally, values of NR are determined in one-third octave bands. A higher NR gives a lower noise level in the receiving room, indicating greater noise insulation.

Noise Level Reduction:
NLR is used to describe the reduction of environmental noise sources, such as aircraft. Lt is a single-number metric based on values of A-weighted noise reduction (NR). The greater the sound insulation in a wall, the lower the noise level in the receiving room, giving a higher NLR. The NLR is useful because it is a simpler metric to use than NR; one number is easier to apply than a set of numbers in one-third octave bands. However some building materials and components are more effective at reducing low-frequency noise than other materials or components. Since aircraft noise contains a lot of low frequency sound, it is important to ensure that insulating materials and components perform well at low frequencies. NLR is a good indicator of overall wall performance but may not be appropriate when designing modifications for aircraft noise reduction, especially if a good NLR value disguises poor low frequency insulation.

Sound Transmission Class:
Since working with a series of one-third octave TL measurements can be cumbersome, a single number descriptor based on the one-third octave values has been developed. This rating method is called the Sound Transmission Class (STC). Like TL, the higher the STC rating for a construction method or component, the higher the sound insulation. Originally, STC ratings were developed as a single-number descriptor for the TL of

interior office walls for typical office noise and speech spectra. Now, they are used, often incorrectly, for exterior walls as well. Most acoustical materials and components are commonly specified in terms of their SIC ratings.

Sound Transmission Loss:
This is the physical measure, which describes the sound insulation value of a built construction system or component. It is a measure, on a logarithmic scale, of the ratio of the acoustic sound power incident on the tested piece to the acoustic sound power transmitted through it. The TL is expressed in decibels (dB). Generally, TL is measured as a function of frequency in one-third octave frequency bands. The higher the sound insulation, the less sound will be transmitted, resulting in a higher TL value. Values of TL are determined in acoustical laboratories under controlled testing methods prescribed by the American Society of Testing and Materials (ASTM).

Sound Insulation Objectives

The goal for residential sound insulation is to reduce the dwelling interior noise levels due to aircraft operations. Total "soundproofing" of the dwelling, such that aircraft operations are inaudible, is economically infeasible. Modest improvements over the existing characteristics (i.e. less than 5 dB) may not provide a noticeable improvement for the homeowner and hence are not cost effective. The ideal solution is to provide sound insulation, which lies between these two extremes.

Interior Noise Objectives

The DNL is the best predictor of overall long-term community reaction to noise from aircraft as well as other activities. Exterior noise exposure less than DNL 65 dB is normally considered compatible with residential land use. Noise exposure is normally incompatible above 65 dB unless stated noise reductions are achieved within the dwellings. A 25 dB NLR is required in the noise zone from 65 to 70 dB. From 70 to 75 dB, a 30 NLR is required. Above 75 dB, residential land use is generally deemed incompatible and should be discouraged.

Sometimes, the DNL noise reduction goal in habitable rooms is supplemented by a single-event noise level criterion. This Sound Exposure Level (SEL) reflects the annoyance associated with individual flyovers because of activity interference. The SEL goal is 65 dB in general living spaces and 60 dB in bedrooms and television viewing rooms. These criteria are only applied to homes within the DNL defined noise impact area, not to homes outside the 65 dB DNL contour boundaries.

To use the SEL interior noise criteria, the outside noise exposure level is compared to the interior goal For example, if the dwelling were between the SEL contour boundaries of 85 to 90 dB, then the required NLR to achieve 60 dB in a bedroom would be 30 dB. (The conservative upper bound of the noise zone is normally used to set NLR goals.)

Note: Standards may differ by geographic region.

Room Variations

The noise level of different rooms in a house depends on the absorption within the room, as well as on the noise entering from outside. Upholstered furniture, drapes, and carpeting absorb sound while hard surfaces do not. In addition, different categories of rooms vary on how predictable their sound environments are. Living rooms, for example, tend to be consistent from one house to another because they almost always have the same types of furnishings in them. Bedrooms vary because some are guest rooms with less furniture, and some have been converted to other uses. Kitchens tend to vary widely due to the use of different wall coverings, such as cabinets and appliances, or floor coverings, such as tile or carpet. These room variations act in addition to variation in exterior sound level and sound transmission through the outside wall.

Sound Insulation Concept

Sound Transmission

In order to effectively examine noise control measures for dwellings it is helpful to understand how sound travels from the exterior to the interior of the house. This happens in one of two basic ways: through the solid structural elements and directly through the air. Consider the sound transmission through a wall constructed with a brick exterior, stud framing, interior finish wall and absorbent material (insulation) in the cavity. The sound transmission starts with noise impinging on the wall exterior. Some of this sound energy will be reflected away and some will make the wall vibrate. The vibrating wall radiates sound into the airspace, which in turn sets the interior finish surface vibrating, with some energy lost in the airspace. This surface then radiates sound into the dwelling interior. Vibration energy also bypasses the air cavity by traveling through the studs and edge connections. Openings in the dwelling, which provide air infiltration paths through windows, vents, and leaks, allow sound to travel directly to the interior. This is a very common and often overlooked source of noise intrusion.

Flanking is a similar concept and usually refers to sound passing around a wall. Examples of common flanking paths include: air ducts, open ceiling or attic plenums, continuous sidewalls and floors, and joist and crawlspaces. The three different major paths for noise transmission into a dwelling are air infiltration through gaps and cracks, secondary elements such as windows and doors, and primary building elements such as walls and the roof.

Low-frequency sound is most efficiently transmitted through solid structural elements such as walls, roof, doors, and windows. High frequencies travel best through the air gaps. Within these broad categories, different building materials have different frequency responses to sound and varying abilities to insulate against sound.

Reducing Transmitted Sound

The amount of sound energy transmitted through a wall, roof or floor can be limited in several ways. First, all air infiltration gaps, openings, and possible flanking paths must be eliminated wherever possible. This is the single most important, but occasionally overlooked, step in noise reduction. This includes keeping windows and doors closed and putting baffles on open-air vents.

Some materials reflect more of the incident sound, converting less of it into vibration energy. The mass of the exterior and interior panels influences how much sound will pass through them. The more mass a structural element has the more energy it takes to set it into vibration, so adding weight to a wall or ceiling by attaching a gypsum board layer will make the assembly pass less sound. Then, absorption in the air cavity and resilient mounting of interior finish panels can further reduce the sound transmitted to the room. The primary approaches for improving sound isolation are:

1. Elimination of openings and flanking paths (when accessible).
2. Improvement of windows and doors.
3. Massive construction (build a wall 3 feet thick and 40 feet high around the whole house).
4. Isolation of panel elements through separation or resilient mounting.
5. Absorption.

Problem Areas

Sound intrusion problems are commonly caused by:

1. Building construction components and configurations not providing sufficient sound insulation.
2. Structural elements, such as windows, doors, walls, roofs and floors chosen and combined in an unbalanced way so that some parts are much weaker sound insulators than others.
3. Unintended openings or sound-flanking paths caused by deterioration or improper installation of construction elements.

Balanced Acoustical Design

The most important, or controlling, sound paths must be identified in order to know how to construct or modify a dwelling to meet a specified noise criteria. The ideal sound insulation design would achieve a condition where all the important sound paths transmit the same amount of acoustical energy. This eliminates any weak links in the building's insulation envelope and is commonly referred to as a balanced acoustical design.

In most cases, after leaks and gaps are sealed, the windows are the controlling sound paths. Replacing them with acoustical windows typically does more to improve the sound insulation performance than any other architectural modifications. Once this is done the other elements may become important in meeting specific noise reduction goals. Exterior doors often require improved sound insulation. Ceilings and walls, which face the exterior, may require modification as well, particularly in the higher DNL noise zone.

New Versus Old

Dwellings can vary in their sound isolation performance. Generally, air infiltration, and therefore sound infiltration, around windows and doors tends to be worse for older dwellings. Inadequate or deteriorated weather-stripping and misaligned framing usually cause this. On the other hand, most older construction techniques and materials tend to be more massive than newer lighter-weight construction. As a result, many older buildings tend to perform better with regard to sound transmission through walls, roofs, and floors than do new houses. Homeowner modifications can also degrade the dwelling's sound insulation performance. Examples include home improvements such as skylights, whole-house attic fans, through-the-wall air conditioners, and solariums. In general, it is much more efficient, and cost effective, to take acoustic performance into account when designing and building a home at the start. Remodeling an already built home is more costly and time consuming than anticipating and building for good sound insulation.

While homes, which are well insulated thermally, often perform well acoustically, thermal insulation is not always a good indicator of sound insulation. Many thermal windows, installed in new construction or added as a homeowner upgrade provide little sound insulation when compared to walls or acoustical windows and are frequently the weak link in the building envelope. However thermal treatments usually eliminate air infiltration and may serve to improve the acoustical performance of a dwelling. Thermal insulation batts are often useful in the wall cavities and attic spaces to absorb some sound.

The North Carolina State Building Code requires homes to meet certain R-Values for thermal performance. These requirements have changed through the years requiring higher R-Values in the more recent homes. The thickness or the density of the product normally determines the R-Value of the insulation. Older homes have less insulation and are subject to more noise infiltration. Currently, the Building Code requires R-13 in the walls, R-19 in the floors and R-30 in the ceilings.

Most homes today are constructed using double pane windows. Although the windows perform well thermally, they usually do not perform well acoustically. The panes are separated by approximately % inch of air space and thin panes of glazing are used. The thin panes of glazing allow for vibration and the vibrations are transmitted through the

Note: Standards may differ by geographic region.

air space to the interior glazing and into the home.

Recommended Building Requirements

Recommended Building Requirements for a Minimum NLR of 25 dB Compliance with the following standards shall be deemed to meet the requirements of the compatible use districts in which an NLR 25 is specified.

General:

a. Brick veneer, masonry blocks, or stucco exterior walls shall be constructed airtight. All joints shall be grouted or caulked airtight, except weep holes for drainage.
b. At the penetration of exterior walls by pipes, ducts, or conduits, the space between the wall and pipes, ducts, or conduits shall be caulked or filled with mortar.
c. Window and/or through-the-wall ventilation units shall not be used.
d. Through-the-wall/door mailboxes shall not be used.

Exterior Walls:

a. Exterior walls other than as described in this section shall have a laboratory sound transmission class rating of at least STC-39.
b. Masonry walls having a surface weight of at least 25 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered or painted with heavy "bridging" paint.
c. Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with siding-on-sheathing, stucco, or brick veneer.

   (1) Interior surface of the exterior walls shall be of gypsum board or plaster at least 1/2" thick, installed on the studs.

   (2) Continuous composition board, plywood, or gypsum board sheathing at least 1/2" thick shall cover the exterior side of the wall studs behind wood or metal siding. Asphalt or wood shake shingles are acceptable in lieu of siding.

   (3) Sheathing panels shall be butted tightly and covered on the exterior with overlapping building paper. The top and bottom edges of the sheathing shall be sealed.

   (4) Insulation material at least 2" thick shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

Windows:

a. Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-28.
b. Glass shall be at least 3/16" thick.
c. All operable windows shall be weather stripped and airtight when closed so as to conform to an air infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.
d. Glass of fixed-sash windows shall be sealed in an airtight manner with a non-hardening sealant, or a soft elastomer gasket, or glazing tape.
e. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-00227, TT-S-00230, or TT-S-00153.
f. The total area of glass in both windows and doors in sleeping spaces shall not exceed 20% of the floor area.

Doors:

a. Doors, other than as described in this section shall have a laboratory sound transmission class rating of at least STC-28.
b. All exterior side-hinged doors shall be solid-core wood or insulated hollow metal at least 1-3/4" thick and shall be fully weather-stripped.

c. Exterior sliding doors shall be weather stripped with an efficient airtight gasket system. The glass in the sliding doors shall be at least 3/16" thick.
d. Glass in doors shall be sealed in an airtight non-hardening sealant, or in a soft elastomer gasket or glazing tape. The perimeter of doorframes shall be sealed airtight to the exterior wall construction.

Roofs:

a. Combined roof and ceiling construction other than described in this section shall have a laboratory sound transmission class rating of at least STC-39.
b. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of closely butted 1/2" composition board, plywood, oriented strand board or gypsum board sheathing, topped by roofing as required.
c. If the underside of the roof is exposed, or if the attic or rafter spacing is less than 6", the roof construction shall have a surface weight of at least 25 pounds per square foot. Rafters, joists, or other framing may not be included in the surface weight calculation.
d. Window or dome skylights shall have a Laboratory sound transmission class rating of at least STC-28.

Ceilings:

a. Gypsum board or plaster ceilings at least1/2" thick. Ceilings shall be substantially airtight, with a minimum number of penetrations.
b. Glass fiber or mineral wool insulation at least 2" thick shall be provided above the ceiling between joists.

Floors:

Openings to any crawl spaces below the floor of the lowest occupied rooms shall not exceed 2% of the floor area of the occupied rooms.

Ventilation:

a. A mechanical ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors, or other openings to the exterior.
b. Gravity vent openings in attic shall not exceed code minimum in number and size.
c. If a fan is used for forced ventilation, the attic inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with coated glass fiber 1" thick, and shall be at least 5 ft long with one 90 degree bend.
d. All vent ducts connecting the interior space to the outdoors, except domestic range exhaust ducts, shall contain at least a 5 ft. length of internal sound absorbing duct lining. Each duct shall be provided with a bend in the duct such that there is no direct line of sight through the duct from the venting cross section to the room-opening cross section.
e. Duct lining shall be coated glass fiber duct liner at least 1" thick.
f. Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a baffle plate across the exterior termination, which allows proper ventilation. The dimensions of the baffle plate should extend at least one diameter beyond the line of sight into the vent duct. The baffle plate shall be of the same material and thickness as the vent duct material.
g. Fireplaces shall be provided with well-fitted dampers.

Recommended Building Requirements for a Minimum NLR of 3OdB Compliance with the following standards shall be deemed to meet the requirements of the compatible use districts in which an NLR 30 is specified.

General:

a. Brick veneer, masonry blocks, or stucco exterior walls shall be constructed airtight. All joints shall be grouted or caulked airtight.

Note: Standards may differ by geographic region.

b. At the penetration of exterior walls by pipes, ducts, or conduits, the space between the wall and pipes, ducts, or conduits shall be caulked or filled with mortar.
c. Window and/or through-the-wall ventilation units shall not be used.
d. Operational fireplaces shall not be used.
e. All sleeping spaces shall be provided with either a sound absorbing ceiling or a carpeted floor.
f. Through-the-wall/door mailboxes shall not be used.

Exterior Walls:

a. Exterior walls, other than as described below, shall have a laboratory sound transmission class rating of at least STC-44.
b. Masonry walls having a surface weight of at least 40 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered or painted with heavy "bridging" paint.
c. Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with siding-on-sheathing, stucco, or brick veneer.

    (1) Interior surface of the exterior walls shall be of gypsum board or plaster at least 1/2" thick, installed on the studs. The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer or stucco. If the exterior is siding-on-sheathing, the interior gypsum board or plaster must be fastened resiliently to the studs.
    (2) Continuous composition board, plywood or gypsum board sheathing shall cover the exterior side of the wall studs behind wood or metal siding. The sheathing and facing shall weigh at least 4 pounds per square foot.
    (3) Sheathing panels shall be butted tightly and covered on the exterior with overlapping building paper. The top and bottom edges of the sheathing shall be sealed.
    (4) Insulation material at least 2" thick shall be installed continuously throughout the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

Windows:

a. Windows, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-33.
b. Glass of double-glazed windows shall be at least 1/8" thick. Panes of glass shall be separated by a minimum 3/4" air space.
c. Double-glazed windows shall employ fixed sash or efficiently weather-stripped operable sash. The sash shall be rigid and weather-stripped with material that is compressed air tight when the window is closed so as to conform to an infiltration test not to exceed 0.5 cubic foot per minute per foot of crack length in accordance with ASTM E-283-65-T.
d. Glass of fixed-sash windows shall be sealed in an airtight manner with a non-

hardening sealant, or a soft elastomer gasket, or glazing tape.

e. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-00227, TT-S-00230, or TT-S-00153.
f. The total area of glass of both windows and exterior doors in sleeping spaces shall not exceed 20% of the floor area.

Doors:

a. Doors, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-33.
b. Double door construction is required for all door openings to the exterior. Openings fitted with side-hinged doors shall have one solid-core wood or insulated hollow metal core door at least 1-3/4" thick, separated by an airspace of at least 4" from another door, which can be a storm door. Both doors shall be tightly fitted and weather-stripped.
c. The glass of double-glazed sliding doors shall be separated by minimum 3/4" airspace. Each sliding frame shall be provided with an efficiently airtight weather stripping material.
d. Glass of all doors shall be at least 3/16" thick. Glass of double sliding doors shall not be equal in thickness.
e. The perimeter of doorframes shall be sealed airtight to the exterior wall construction.
f. Glass of doors shall be set and sealed in an airtight, non-hardening sealant, or a soft elastomer gasket, or glazing tape.

Roofs:

a. Combined roof and ceiling construction other than described in this section shall have laboratory sound transmission class rating of at least STC-44.
b. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of closely butted 1/2" composition board, plywood, oriented strand board or gypsum board sheathing topped by roofing as required.
c. If the underside of the roof is exposed, or if the attic or rafter spacing is less than 6", the roof construction shall have a surface weight of at least 40 pounds per square foot. Rafters, joists or other framing may not be included in the surface weight calculations.
d. Window or dome skylights shall have a laboratory sound transmission class rating of at least STC-33.

Ceilings:

a. Gypsum board or plaster ceilings at least 1/2" thick shall be provided
b. Glass fiber or mineral wool insulation at least 2" thick shall be provided above the ceiling between joists.

Floors:

a. The floor of the lowest occupied rooms shall be slab on fill, below grade, or over a fully enclosed basement. All door and window openings in the fully enclosed basement shall be tightly fitted.

Ventilation:

a. A mechanical ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without the need to open any windows, doors, or other openings to the exterior.
b. Gravity vent openings in attic snail not exceed code minimum in number and size. The openings shall be fitted with transfer ducts at least 3 ft in length containing internal sound absorbing duct lining. Each duct shall have a lined 90-degree bend in the duct such that the line of sight is interrupted from the exterior through the duct into the attic.
c. If a fan is used for forced ventilation, the attic inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with coated glass fiber 1" thick, and shall be at least 5 ft long with one 90 degree bend.
d. All vent ducts connecting the interior space to the outdoors, except domestic range exhaust ducts shall contain at least a 10 ft. length of internal sound absorbing duct lining. Each duct shall be provided with a lined 90-degree bend in the duct such that there is no direct line of sight through the duct from the venting cross section to the room opening cross section.
e. Duct lining shall be coated glass fiber duct.
f. Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a baffle plate across the exterior termination, which allows proper ventilation. The dimensions of the baffle plate should extend at least one diameter beyond the line of sight into the vent duct. The baffle plate shall be made of the same material and thickness as the vent duct material.
g. Building heating units with flues or combustion air vents shall be located in a closet or room closed off from the occupied space by doors.
h. Doors between occupied space and mechanical equipment areas shall be solid core wood or 20 gauge steel hollow metal at least 1-3/4" thick and shall be fully weather-stripped.

Recommended Building Requirements for a Minimum NLR of35dB Compliance with the following standards shall be deemed to meet the requirements of the compatible use districts in which an NLR 35 is specified

General:

a. Brick veneer, masonry blocks or stucco exterior walls shall be constructed

airtight. All joints shall be grouted or caulked airtight.

b. At the penetration of exterior walls by pipes, ducts or conduits, the space between the wall and pipes, ducts or conduits shall be caulked or filled with mortar.
c. Window and/or through-the-wall ventilation units shall not be used.
d. Operational vented fireplaces shall not be used.
e. All sleeping spaces shall be provided with either a sound absorbing ceiling or a carpeted floor.
f. Through-the-wall/door mailboxes shall not be used.
g. No glass or plastic skylight shall be used.

Exterior Walls:

a. Exterior walls other than as described below shall have a laboratory sound transmission class rating of at least STC-49.
b. Masonry walls having a surface weight of at least 75 pounds per square foot do not require a furred (stud) interior wall. At least one surface of concrete block walls shall be plastered or painted with heavy "bridging" paint.
c. Stud walls shall be at least 4" in nominal depth and shall be finished on the outside with siding-on-sheathing, stucco, or brick veneer.

    (1) Interior surface of the exterior walls shall be of gypsum board or plaster at least 1/2" thick, installed on studs, The gypsum board or plaster may be fastened rigidly to the studs if the exterior is brick veneer. If the exterior is stucco or siding-on-sheathing, the interior gypsum board or plaster must be fastened resiliently to the studs.
    (2) Continuous composition board, plywood or gypsum board sheathing shall cover the exterior side of the wall studs behind wood or metal siding. The sheathing and facing shall weigh at least 4 pounds per square foot.
    (3) Sheathing panels shall be butted tightly and covered on the exterior with overlapping building paper. The top and bottom edges of the sheathing shall be sealed.
    (4) Insulation material at least 3-1/2" thick shall be installed continuously through the cavity space behind the exterior sheathing and between wall studs. Insulation shall be glass fiber or mineral wool.

Windows:

a. Windows other than as described in this section shall have a laboratory sound transmission class rating of at least STC-38.
b. Glass of double-glazed windows shall be at least 1/8" thick; Panes of glass shall be separated by a minimum 3/4" air space and shall not be equal in thickness.
c. Glass of windows shall be sealed in an airtight manner with a non-hardening sealant, or a soft elastomer gasket or glazing tape.

d. The perimeter of window frames shall be sealed airtight to the exterior wall construction with a sealant conforming to one of the following Federal Specifications: TT-S-00227, TT-S-00230, or TT-S-00153.
e. The total area of glass of both windows and exterior doors in sleeping spaces shall not exceed 20% of the floor area.

Doors:

a. Doors, other than as described in this section, shall have a laboratory sound transmission class rating of at least STC-38.
b. Double door construction is required for all door openings to the exterior. The door shall be side-hinged and shall be solid-core wood or insulated hollow metal, at least 1-3/4" thick, separated by a vestibule at least 3 ft in length. Both doors shall be tightly fitted and weather-stripped.
c. The perimeter of doorframes shall be sealed airtight to the exterior wall construction.

Roofs:

a. Combined roof and ceiling construction other than described in this section and Section 3-7 shall have a laboratory sound transmission class rating of at least STC-49.
b. With an attic or rafter space at least 6" deep, and with a ceiling below, the roof shall consist of closely butted 1/2" composition board, plywood, oriented strand board or gypsum board sheathing topped by roofing as required.
c. If the underside of the roof is exposed, or if the attic or rafter spacing is less than 6" the roof construction shall have a surface weight of at least 75 pounds per square foot. Rafters, joists or other framing may not be included in the surface weight calculation.

Ceilings:

a. Gypsum board or plaster ceilings at least 1/2" thick shall be provided where required by Paragraph 3-6. Ceilings shall be substantially airtight, with a minimum number of penetrations. The ceiling panels shall be mounted on resilient clips or channels. A non-hardening sealant shall be used to seal gaps between the ceiling and walls around the ceiling perimeter.
b. Glass fiber or mineral wool insulation at least 3 1/2" thick shall be provided above the ceiling between joists.

Floors:

The floors of the lowest occupied rooms shall be slab on fill or below grade.

Ventilation:

a. A mechanical ventilation system shall be installed that will provide the minimum air circulation and fresh air supply requirements for various uses in occupied rooms without need to open any windows, doors, or other openings to the exterior.
b. Gravity vent openings in attic shall not exceed code minimum in number and size. The opening shall be fitted with transfer ducts at least 6 ft. in length containing internal sound absorbing duct lining. Each duct shall have a lined 90-degree bend in the duct such that there is no direct line of sight from the exterior through the duct into the attic.
c. If a fan is used for forced ventilation, the attic inlet and discharge openings shall be fitted with sheet metal transfer ducts of at least 20 gauge steel, which shall be lined with 1" thick coated glass fiber, and shall be at least 10 ft long with one 90 degree bend.
d. All vent ducts connecting the interior space to the outdoors, excepting domestic range exhaust ducts, shall contain at least a 10 ft length of internal sound absorbing duct lining. Each duct shall be provided with a lined 90-degree bend in the duct such that there is no direct line of sight through the duct from the venting cross section to the room-opening cross section.
e. Duct lining shall be coated glass fiber duct liner at least 1" thick.
f. Domestic range exhaust ducts connecting the interior space to the outdoors shall contain a baffle plate across the exterior termination, which allows proper ventilation. The dimensions of the baffle plate should extend at least one diameter beyond the line of sight into the vent duct. The baffle plate shall be of the same material and thickness as the vent duct material.
g. Building heating units with flues or combustion air vents shall be located in a closet or room
closed off from the occupied space by doors.
h. Doors between occupied space and mechanical equipment areas shall be solid core wood or 20 gauge steel hollow metal at least 1-3/4" thick and shall be fully weather-stripped.

Methods for Exterior Wall Sound Insulation in New Homes

Typically, most wall construction consists of a 3.5-inch stud cavity with studs spaced 16 inches on center, %-inch gypsum drywall on the interior, 7/16 structural sheathing on the exterior and either siding or brick veneer as the finish on the exterior, Consider using the construction techniques below:

1. Increase the wall stud cavity to 5.5-inches, spaced 24 inches on center. The increased depth of the stud cavity will allow for the installation of R-1 9 insulation.

2. When considering the type of insulation material, consider using cellulose insulation material. This material is of a higher density. The method of installation

is a spray method that tends to completely fill the cavity without voids.

3. Prior to the installation of insulation material in the walls, seal all penetrations through the top and bottom plates. Remember if air can enter, so can sound. Seal all penetrations through the bottom plate with caulk. Seal all penetrations through the top plate with caulking materials meeting the requirements of ASTM E-136. Sealing the penetrations is a requirement of the North Carolina State Building Code.

4. Increase the thickness of the interior wall finish from 1/2-inch to 5/8-inch gypsum wallboard.

5. Caulk around all openings through the drywall such as receptacles, switches, plumbing drains, etc.

6. Increase the thickness of the exterior sheathing material to 5/8-inch or thicker material.

7. Consider using brick veneer instead of siding material for the exterior finish. Insure at least a one-inch air space between the brick veneer and the siding.

8. If siding is to be used, avoid using vinyl siding. Choose siding with a higher density such as Hardiplank, or wood siding. Install 30-pound felt between the siding and sheathing lapped 2 inches on horizontal joints and 6 inches on vertical joints.

9. If vinyl siding is a must, install 1/4-thick fanfold insulation board between the siding and sheathing.

10. Avoid large openings or breaks in continuity in the walls, such as large windows.

11. Install bathroom vent and kitchen hood vents on the side of the home away from the flight track. Make sure that vent terminations have an automatic closure on the end. Always use metal pipe for the vent pipe.

Methods for Improving Attic and Ceiling Sound Insulation In New Homes

1. Consider using energy trusses. Energy trusses allow for the installation of ceiling insulation to a full depth along the plate lines at exterior walls.

2. Install baffles on attic vents where practical.

3. Install acoustically absorptive material to a thickness equal to R-38 to the attic space to reduce reverberant sound level buildup. Apply material evenly throughout the attic space, taking care to keep it away from eave vents and

openings. Consider the use of cellulose insulation. This material fills the cavity without leaving voids in the material and is of a higher density than fiberglass.

4. Install 5/8-inch gypsum board as the interior ceiling finish.

5. Caulk around all penetrations through the ceiling membrane such as light fixtures.

6. Avoid the use of "can-type — recessed light" light fixtures.

7. Avoid the use of true exposed wood beams on the ceiling. This creates a continuous path for sound through the ceiling structure.
8. Avoid the use of whole house exhaust fans in the ceiling.

Methods for Improving Floor Sound Insulation In New Homes

1. Install R-30 insulation batts between the joists. The North Carolina State Building Code requires R-19.

2. Seal all penetrations through the floor assembly such as Heating and Air Conditioning supplies; exhaust ducts such as down draft exhaust from dryers and ranges, etc.

3. Install foundation vents of the swing cover awning type instead of the horizontal slider type.

4. Consider a sealed crawlspace and insulate the foundation walls, If this method is chosen, caulk between the mudsill and the foundation.

Methods for Improving Window Sound Insulation in New Homes

1. The most effective method of reducing sound transmission by a window is by increasing thickness of the glass panes. Basically, thicker is better. Thicker glass tends to bend less, and therefore vibrates less when exposed to sound waves. Using 6mm glass combinations or laminated glass is the simplest, most cost effective method of reducing sound transmission.

2. When choosing windows for your new home remember windows are generally the weakest link in sound attenuation

3. Choose windows that are double-glazed with panes at least 3/16 inch thick. Windows shall be double glazed with panes at least three/sixteenths inch ***(3/16")*** thick. Panes of glass should be separated by a minimum one-half inch ***(1/2")***

airspace, and should not be equal in thickness.

4. Double glazed windows should employ fixed sash or efficiently weather-stripped, operable sash. The sash shall be rigid and weather-stripped with material that is compressed airtight when the window is closed.

5. Glass should be sealed in an airtight manner with a non-hardening sealant or a soft
elastomer gasket or gasket tape.

6. The perimeter of the window frames should be sealed airtight to the exterior wall construction with a sealant. The usual installation of windows employs stuffing the void between the window and framing with fiberglass insulation. The use of a sealant on top of the insulation material acts as an air infiltration barrier. Insulation by itself is not a good air infiltration barrier. Remember, if air can pass through, so can sound.

7. Avoid large picture windows and sliding glass doors on sides of the dwelling, which face the flight track.

Methods for Improving Door Sound Insulation in New Homes

1. Double door construction should be considered for all hinged door openings to the exterior. Such doors should be side hinged and shall be solid core wood or insulated hollow metal at least one and three-fourths inch (1-3/4") thick separated by an airspace of at least three inches (3") from another door, storm door. Both doors shall be tightly fitted and weather-stripped.

2. All doors, shall be at least three-sixteenths (3/16") thick. Glass of double sliding doors shall not be of equal thickness.

3. The perimeter of doorframes shall be sealed airtight to the exterior wall construction (framing). Stuff the gap between the doorframe and the framing with insulation and seal with a non-hardening caulk. Remember, if air can pass through, so can sound.

4. Glass in doors should be sealed in an airtight non-hardening sealant or in a soft elastomer gasket or gasket tape.

Methods for Improving Sound Insulation in Existing Homes

The best time to consider sound attenuation is during the construction of new homes. Retrofitting an existing home for sound attenuation can be costly. If one is considering retrofitting for sound attenuation, it is best done during a planned renovation project. As mentioned earlier in this guide, windows are generally the weakest link in sound

attenuation. Some of the simpler and easiest ways to attain sound attenuation is by a combination of the following:

1. Add insulation in the attic to an overall R-Value thickness of R-38.

2. Caulk around all penetrations through the interior finishes. (Receptacles, light fixtures, plumbing drains, etc.)

3. Install single pane storm windows over existing single pane windows.

4. Install weather-stripping on all doors.

5. Employ any of the methods described in Methods for Improving Sound Attenuation in New Homes as the project allows.

Methods of Noise and Vibration Control In Residential HVAC Systems

1. Mount the motor/fan at grade level on factory-supplied vibration isolators to minimize vibration transmitted to the house.

2. If fans or other pieces of equipment are located in the attic, use mounting bases and vibration isolators to reduce structure borne noise and vibration transmission.

3. Install flexible duct connectors to limit vibration transmitted to the ductwork or the dwelling structure.

4. Use standard sheet metal ductwork in attics and crawlspaces. Ductwork is exposed to higher levels of aircraft noise in these spaces. Do not use flexible ductwork in attic spaces since it does not have as good sound-insulating properties as standard sheet metal.

5. Supply grilles in rooms should be of the opposed-blade type and be designed for low noise.

6. A duct sound trap (muffler) should be installed just inside the fresh-air inlet opening. The sound trap will reduce any aircraft noise that passes through this opening and will eliminate the possibility of aircraft noise being transmitted via the duct path.

COMPARISON OF COMPONENTS FOR SOUND ATTENUATION

Component	*Regular*	*Sound Attenuation*
Door		
3/0 X 6/8 insulated embossed 6 panel exterior steel door	$ 175.00	175.00
Windows Length X Width United Inch = UI Windows compared are 1 over 1 with grids		
Up to 64 UI	$214.00	$222.90
64 to 69 UI	$231.20	$241.10
69 to 74 UI	$248.40	$259.30
74 to 79 UI	$ 265.60	$ 277.40
79 to 84 U1	$282.80	$295.60
84 to 89 UI	$ 300.20	$ 314.00
89 to 94 UI	$317.30	$332.00
94 to 99 U1	$334.50	$350.30
99 to 104 UI	$352.00	$368.00
Over IO4 UI	$3.52 per UI	$3.68perUi
Insulation/Sound Batting Walls		
3.5inch stud cavity: R-13 Fiberglass Batt	$ 0.36 psf	$0.36 psf
3.5inch stud cavity: R-13 Cellulose Sprayed	$ 0.70	$0.70 psf
5.5inch stud cavity: R-19 Fiberglass Batt	$ 0.39	$0.39 psf
5.5inch stud cavity: R-19 Cellulose Sprayed	$ 0.90	$ 0.90 psf
Insulation/Sound Batting Ceilings		
R-30 Fiberglass Batt	$ 0.61 psf	$ 0.61 psf
R-38 Fiberglass Batt	$ 0.80 psf	$ 0.80 psf
R-30 Fiberglass Blown	$ 0.40 psf	$ 0.40 psf
R-38 Fiberglass Blown	$ 0.50 psf	$ 0.50 psf
R-30 Cellulose Sprayed	$ 0.32 psf	$ 0.32 psf
R-38 Cellulose Sprayed	$ 0.42 psf	$ 0.42 psf
Drywall		
1/2 inch X 4 ft. X 12 ft.	$ 8.98 per sheet	$ 8.98 per sheet
5/8 inch X 4 ft X 12 ft.	$10.56 per sheet	$ 10.56 per sheet
Miscellaneous		
Seal/Caulk around 3/0 X 5/0 window with non-hardening caulk assuming 3/8-inch crack		$ 5.00 per window
Seal/Caulk around 3/0 X 6/8 doors with non-hardening caulk assuming 3/8-inch crack		$ 6.00 per door
Insulate metal exhaust duct on exterior of duct		$ 2.50 per foot

Values in this table are for comparison only and are not intended to be a guaranteed price quote for any product.

Note: Standards may differ by geographic region.

APPENDIX 3

2005 JLUS-Related Virginia State Legislature Amendments

S 1160: An Act to amend and reenact 152-2295 of the Code of Virginia, relating to airport noise zones.

S 1161: An Act to amend and reenact 55-518 through 55-521 and 55-524 of the Code of Virginia and to amend the Code of Virginia by adding a section numbered 55-519.1 relating to the Virginia Residential Property Disclosure Act; required disclosures for properties adjacent to a military air installation.

S 1162: An Act to amend the Code of Virginia by adding a section numbered 55-248.121:1, relating to the Virginia Residential Landlord and Tenant Act; required disclosures for properties located adjacent to a military air installation.

2005 SESSION

ENROLLED

VIRGINIA ACTS OF ASSEMBLY — CHAPTER

An Act to amend and reenact § 15.2-2295 of the Code of Virginia, relating to airport noise zones.

[S 1160]

Approved

Be it enacted by the General Assembly of Virginia:

1. That § 15.2-2295 of the Code of Virginia is amended and reenacted as follows:

§ 15.2-2295. Aircraft noise attenuation features in buildings and structures within airport noise zones.

Any locality in whose jurisdiction, or adjacent jurisdiction, is located a licensed airport or United States government or military air facility, may enforce building regulations relating to the provision or installation of acoustical treatment measures in residential buildings and structures, or portions thereof, other than farm structures, for which building permits are issued after January 1, 2003, in areas affected by above average noise levels from aircraft due to their proximity to flight operations at nearby airports. *Any locality in whose jurisdiction a United States Master Jet Base is located or any adjacent locality may, in addition, adopt and enforce building regulations relating to the provision or installation of acoustical treatment measures applicable to buildings and structures, or portions thereof, in Assembly, Business, Educational, Institutional, and Mercantile groups, as defined in the International Building Code.*

In establishing the regulations, the locality may adopt one or more noise overlay zones as an amendment to its zoning map and may establish different measures to be provided or installed within each zone, taking into account the severity of the impact of aircraft noise upon buildings and structures within each zone. Any such regulations or amendments to a zoning map shall provide a process for reasonable notice to affected property owners. Any regulations or amendments to a zoning map shall be adopted in accordance with this chapter. A statement shall be placed on all recorded surveys, subdivision plats and all final site plans approved after January 1, 2003, giving notice that a parcel of real property either partially or wholly lies within an airport noise overlay zone. No existing use of property which is affected by the adoption of such regulations or amendments to a zoning map shall be considered a nonconforming use solely because of the regulations or amendments. The provisions of this section shall not affect any local aircraft noise attenuation regulations or ordinances adopted prior to the effective date of this act, and such regulations and ordinances may be amended provided the amendments shall not alter building materials, construction methods, plan submission requirements or inspection practices specified in the Virginia Uniform Statewide Building Code.

2005 SESSION

ENROLLED

VIRGINIA ACTS OF ASSEMBLY — CHAPTER

An Act to amend and reenact §§ 55-518 through 55-521 and 55-524 of the Code of Virginia and to amend the Code of Virginia by adding a section numbered 55-519.1 relating to the Virginia Residential Property Disclosure Act; required disclosures for properties adjacent to a military air installation.

[S 1161]

Approved

Be it enacted by the General Assembly of Virginia:

1. That §§ 55-518 through 55-521 and 55-524 of the Code of Virginia are amended and reenacted and the Code of Virginia is amended by adding a section numbered 55-519.1 as follows:

§ 55-518. Exemptions.

A. The following are specifically excluded from the provisions of this chapter:

1. Transfers pursuant to court order including, but not limited to, transfers ordered by a court in administration of an estate, transfers pursuant to a writ of execution, transfers by foreclosure sale, transfers by a trustee in bankruptcy, transfers by eminent domain, and transfers resulting from a decree for specific performance.

2. Transfers to a beneficiary of a deed of trust by a trustor or successor in interest who is in default; transfers by a trustee under a deed of trust pursuant to a foreclosure sale, or transfers by a beneficiary under a deed of trust who has acquired the real property at a sale conducted pursuant to a foreclosure sale under a deed of trust or has acquired the real property by a deed in lieu of foreclosure.

3. Transfers by a fiduciary in the course of the administration of a decedent's estate, guardianship, conservatorship, or trust.

4. Transfers from one or more co-owners solely to one or more other co-owners.

5. Transfers made solely to any combination of a spouse or a person or persons in the lineal line of consanguinity of one or more of the transferors.

6. Transfers between spouses resulting from a decree of divorce or a property settlement stipulation pursuant to the provisions of Title 20.

7. Transfers made by virtue of the record owner's failure to pay any federal, state, or local taxes.

8. Transfers to or from any governmental entity or public or quasi-public housing authority or agency.

9. Transfers involving the first sale of a dwelling*; provided, that this exemption shall not apply to the disclosures required by § 55-519.1.*

B. Notwithstanding the provisions of subdivision 9 of this section, the builder of a new dwelling shall disclose in writing to the purchaser thereof all known material defects which would constitute a violation of any applicable building code. The disclosure required by this subsection shall be made by a builder (i) when selling a completed dwelling, before acceptance of the purchase contract or (ii) when selling a dwelling before or during its construction, after issuance of a certificate of occupancy. Such disclosure shall not abrogate any warranty or any other contractual obligations the builder may have to the purchaser. The disclosure required by this subsection may be made on the disclosure form described in § 55-519. The builder may not satisfy the requirements of this subsection by the use of the disclaimer statement described in § 55-519. If no defects are known by the builder to exist, no written disclosure is required by this subsection.

§ 55-519. Required disclosures.

A. With regard to transfers described in § 55-517 of this chapter, the owner of the residential real property shall furnish to a purchaser one of the following:

1. *Except with respect to the disclosures required by § 55-519.1,* a residential property disclaimer statement in a form provided by the Real Estate Board stating that the owner makes no representations or warranties as to the condition of the real property or any improvements thereon, and that the purchaser will be receiving the real property "as is," that is, with all defects which may exist, if any, except as otherwise provided in the real estate purchase contract; or

2. A residential property disclosure statement disclosing those items contained in a form provided by the Real Estate Board to implement the provisions of this chapter and to list items which are required to be disclosed relative to the physical condition of the property. Such disclosure form may include defects of which the owner has actual knowledge regarding: (i) the water and sewer systems, including the source of household water, water treatment system, and sprinkler system; (ii) insulation; (iii) structural systems, including roof, walls, floors, foundation and any basement; (iv) plumbing, electrical, heating

and air conditioning systems; (v) wood-destroying insect infestation; (vi) land use matters; (vii) hazardous or regulated materials, including asbestos, lead-based paint, radon and underground storage tanks; and (viii) other material defects known to the owner. The disclosure form shall contain a notice to prospective purchasers and owners (a) that the prospective purchaser and the owner may wish to obtain professional advice or inspections of the property and (b) that information is available at the Department of Environmental Quality which identifies confirmed releases or discharges of oil which may affect the property. The disclosure form shall also contain a notice to purchasers that the information contained in the disclosure is the representations of the owner and is not the representations of the broker or salesperson, if any. The owner shall not be required to undertake or provide any independent investigation or inspection of the property in order to make the disclosures required by this chapter.

B. The disclosure and disclaimer forms shall contain a notice to purchasers that regardless of whether the owner proceeds under subdivision 1 or 2 of subsection A, the owner makes no representations with respect to any matters which may pertain to parcels adjacent to the subject parcel. Further, such notice shall advise purchasers to exercise whatever due diligence a particular purchaser deems necessary with respect to adjacent parcels in accordance with terms and conditions as may be contained in the real estate purchase contract, but in any event, prior to settlement on a parcel of residential real property.

C. The disclosure and disclaimer forms shall contain a notice to purchasers that whether the owner proceeds under subdivision 1 or 2 of subsection A, purchasers should exercise whatever due diligence they deem necessary with respect to information on any sexual offenders registered under Chapter 23 (§ 19.2-387 et seq.) of Title 19.2, including how to obtain such information.

§ 55-519.1. Required disclosures for properties located adjacent to a military air installation.

The owner of residential real property located in any locality in which a military air installation is located, or in any adjacent locality, shall furnish to the purchaser on a form provided by the Real Estate Board, a written disclosure stating that such property is located in a noise zone or accident potential zone, or both, as designated by the locality in its official zoning map. Such disclosure shall state the specific noise zone or accident potential zone, or both, in which the property is located according to the official zoning map.

§ 55-520. Time for disclosure; cancellation of contract.

A. The owner of residential real property subject to this chapter shall deliver to the purchaser the written disclosures or disclaimer required by this chapter prior to the acceptance of a real estate purchase contract. For the purposes of this chapter, a "real estate purchase contract" means a contract for the sale, exchange, or lease with option to buy of real estate subject to this chapter, and "acceptance" means the full execution of a real estate purchase contract by all parties. The residential property disclaimer statement or residential property disclosure statement may be included in the real estate purchase contract, in an addendum thereto, or in a separate document.

B. If the disclosure or disclaimer required by this chapter is delivered to the purchaser after the acceptance of the real estate purchase contract, the purchaser's sole remedy shall be to terminate the real estate purchase contract at or prior to the earliest of (i) three days after delivery of the disclosure or disclaimer in person~~,~~*;* or (ii) five days after the postmark if the disclosure or disclaimer is deposited in the United States mail, postage prepaid, and properly addressed to the purchaser~~,~~*;* or (iii) settlement upon purchase of the property~~,~~*;* or (iv) occupancy of the property by the purchaser~~,~~*;* or (v) the execution by the purchaser of a written waiver of the purchaser's right of termination under this chapter contained in a writing separate from the real estate purchase contract~~,~~*;* or (vi) the purchaser making written application to a lender for a mortgage loan where such application contains a disclosure that the right of termination shall end upon the application for the mortgage loan. In order to terminate a real estate purchase contract when permitted by this chapter, the purchaser must, within the times required by this chapter, give written notice to the owner either by hand delivery or by United States mail, postage prepaid, and properly addressed to the owner. If the purchaser terminates a real estate purchase contract in compliance with this chapter, the termination shall be without penalty to the purchaser, and any deposit shall be promptly returned to the purchaser. Any rights of the purchaser to terminate the contract provided by this chapter shall end if not exercised prior to the earlier of (i) the making of a written application to a lender for a mortgage loan where the application contains a disclosure that the right of termination shall end upon the application for the mortgage loan or (ii) settlement or occupancy by the purchaser, in the event of a sale, or occupancy, in the event of a lease with option to purchase.

C. Notwithstanding the provisions of subsection B or of subdivision B 2 of § 55-524, no purchaser of residential real property located in a noise zone designated on the official zoning map of the locality as having a day-night average sound level of less than 65 decibels shall have the right to terminate a real estate purchase contract pursuant to this section for failure of the property owner to timely provide any disclosure required by § 55-519.1.

§ 55-521. Owner liability.

A. *Except with respect to the disclosures required by § 55-519.1,* the owner shall not be liable for

any error, inaccuracy or omission of any information delivered pursuant to this chapter if: (i) the error, inaccuracy or omission was not within the actual knowledge of the owner or was based on information provided by public agencies or by other persons providing information as specified in subsection B that is required to be disclosed pursuant to this chapter, or the owner reasonably believed the information to be correct, and (ii) the owner was not grossly negligent in obtaining the information from a third party and transmitting it. *The owner shall not be liable for any error, inaccuracy, or omission of any information required to be disclosed by § 55-519.1 if the error, inaccuracy, or omission was the result of information provided by an officer or employee of the locality in which the property is located.*

B. The delivery by a public agency or other person, as described in subsection C below, of any information required to be disclosed by this chapter to a prospective purchaser shall be deemed to comply with the requirements of this chapter and shall relieve the owner of any further duty under this chapter with respect to that item of information.

C. The delivery by the owner of a report or opinion prepared by a licensed engineer, land surveyor, geologist, wood-destroying insect control expert, contractor or other home inspection expert, dealing with matters within the scope of the professional's license or expertise, shall satisfy the requirements of subsection A if the information is provided to the owner pursuant to a request therefor, whether written or oral. In responding to such a request, an expert may indicate, in writing, an understanding that the information provided will be used in fulfilling the requirements of this chapter and, if so, shall indicate the required disclosures, or portions thereof, to which the information being furnished is applicable. Where such a statement is furnished, the expert shall not be responsible for any items of information, or, portions thereof, other than those expressly set forth in the statement.

§ 55-524. Actions under this chapter.

A. Notwithstanding any other provision of this chapter or any other statute or regulation, no cause of action shall arise against an owner or a real estate licensee for failure to disclose that an occupant of the subject real property, whether or not such real property is subject to this chapter, was afflicted with human immunodeficiency virus (HIV) or that the real property was the site of:

1. An act or occurrence which had no effect on the physical structure of the real property, its physical environment, or the improvements located thereon; or

2. A homicide, felony, or suicide.

B. The purchaser's remedies hereunder for failure of an owner to comply with the provisions of this chapter are as follows:

1. In the event of a misrepresentation in any residential property disclosure statement or failure to deliver a disclosure or disclaimer statement, an action for actual damages suffered as a result of defects existing in the property as of the date of execution of the real estate purchase contract which would have been disclosed by a disclosure in compliance with this chapter and of which the purchaser was not aware at the time of settlement if by sale of the property, or occupancy by the purchaser if by lease with the option to purchase; or

2. In the event of a misrepresentation in any residential property disclosure statement or the failure to provide the disclosure or disclaimer required by this chapter, the contract may be terminated subject to the provisions of subsection B of § 55-520.

3. In the event the owner fails to provide the disclosure required by § 55-519.1, or the owner misrepresents, willfully or otherwise, the information required in such disclosure, except as result of information provided by an officer or employee of the locality in which the property is located, the purchaser may maintain an action to recover his actual damages suffered as the result of such violation. Notwithstanding the provisions of this subdivision, no purchaser of residential real property located in a noise zone designated on the official zoning map of the locality as having a day-night average sound level of less than 65 decibels shall have a right to maintain an action for damages pursuant to this section.

C. Any action brought under this subsection shall be commenced within one year of the date the purchaser received the disclosure or disclaimer statement. If no disclosure or disclaimer statement was delivered to the purchaser, an action shall be commenced within one year of the date of settlement if by sale, or occupancy if by lease with an option to purchase.

Nothing contained herein shall prevent a purchaser from pursuing any remedies at law or equity otherwise available against an owner in the event of an owner's intentional or willful misrepresentation of the condition of the subject property.

2. That the Real Estate Board shall promulgate regulations containing the forms for the disclosures required by the provisions of this act to be effective within 280 days of its enactment.

2005 SESSION

ENROLLED

VIRGINIA ACTS OF ASSEMBLY — CHAPTER

An Act to amend the Code of Virginia by adding a section numbered 55-248.12:1, relating to the Virginia Residential Landlord and Tenant Act; required disclosures for properties located adjacent to a military air installation.

[S 1162]

Approved

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding a section numbered 55-248.12:1 as follows:

§ 55-248.12:1. Required disclosures for properties located adjacent to a military air installation; remedy for nondisclosure.

A. Notwithstanding the provisions of subdivision A 10 of § 55-248.5, the landlord of property in any locality in which a military air installation is located, or any person authorized to enter into a rental agreement on his behalf, shall provide to a prospective tenant a written disclosure that the property is located in a noise zone or accident potential zone, or both, as designated by the locality on its official zoning map. Such disclosure shall be provided prior to the execution by the tenant of a written lease agreement or, in the case of an oral lease agreement, prior to occupancy by the tenant. The disclosure shall specify the noise zone or accident potential zone in which the property is located according to the official zoning map of the locality. A disclosure made pursuant to this section containing inaccurate information regarding the location of the noise zone or accident potential zone shall be deemed as nondisclosure unless the inaccurate information is provided by an officer or employee of the locality in which the property is located.

B. Any tenant who is not provided the disclosure required by subsection A may terminate the lease agreement at any time during the first 30 days of the lease period by sending to the landlord by certified or registered mail, return receipt requested, a written notice of termination. Such termination shall be effective as of (i) 15 days after the date of the mailing of the notice or (ii) the date through which rent has been paid, whichever is later. In no event, however, shall the effective date of the termination exceed one month from the date of mailing. Termination of the lease agreement shall be the exclusive remedy for the failure to comply with the disclosure provisions of this section, and shall not affect any rights or duties of the landlord or tenant arising under this chapter, other applicable law, or the rental agreement.

APPENDIX 4

Prepared by:
Escambia County Attorney's Office
14 West Government Street, Room 411
Pensacola, Florida 32502
850/595-4970

AVIGATION EASEMENT

THIS GRANT OF AN AVIGATION EASEMENT made this _____ day of _____, 2004, by and between _____, whose mailing address is _____ ("Grantor," which term shall include the singular and plural, masculine and feminine), and Escambia County, a political subdivision of the State of Florida, acting by and through its duly authorized Board of County Commissioners, whose mailing address is 223 Palafox Place, Pensacola, Florida 32502 ("Grantee").

WITNESSETH

WHEREAS Grantor is the owner of certain real property located in Escambia County, Florida; and

WHEREAS, Grantee requires, as a condition precedent to the development or use of the property, conveyance from Grantor of an Avigation Easement; and

WHEREAS Grantor has agreed to grant an Avigation Easement to Grantee in and over Grantor=s property under the terms and conditions set forth in this instrument;

NOW, THEREFORE, Grantor, for good and valuable consideration the receipt and sufficiency of which is acknowledged, does grant to Grantee and Grantee=s heirs, assigns, successors, and legal representatives, a perpetual Avigation Easement in and over the following described property (Property):

See legal description attached as Exhibit A

This Avigation Easement is granted with the following express terms and conditions:

1. Grantor grants, bargains, sells, and conveys to Grantee, its successors and assigns, for the use and benefit of Grantee and any civilian or military airfields that may be located in Escambia County and any operators, owners, or users of civilian or military Aircraft that may operate in the airspace in and above Escambia County, a perpetual Avigation Easement for the free and unobstructed flight of Aircraft ("Aircraft" being defined for the purpose of this instrument as any contrivance now known or hereafter invented, used, or designed for flight in and through the air) in and through the airspace above, over, and across the surface of the Property, together with the right to create or cause in the airspace such noise, vibrations, odors, vapors, exhaust, smoke, dust or other effects that may be inherent in the operation of Aircraft, and for the use of the airspace by Aircraft for launching from, maneuvering about, and landing at local civilian or military airfields.

2. Nothing in this instrument shall operate to preclude claims by Grantor, his heirs, assigns, successors, and legal representatives, for any physical injuries or damages caused by Aircraft crashing into or otherwise coming into direct physical contact with the Property or persons located thereon.

3. Grantor, for himself, his heirs, assigns, successors, and legal representatives, expressly releases and forever discharges Grantee, its elected or appointed officials, representatives, agents, employees, and any operators, owners, or users of civilian or military Aircraft or airfields, from any and all liability whatsoever, including any and all suits, claims, debts, obligations, costs, expenses, actions, or demands, vested or contingent, known or unknown, whether for injuries to persons or damages to property, which Grantor may own, hold, or assert by reason of noise, vibrations, odors, vapors, exhaust, smoke, dust or other effects that may be inherent in the operation of Aircraft, caused or created by the flight or passage of Aircraft in or through the airspace subject to the easement described in this instrument. Additionally, Grantor, for himself, his heirs, assigns, successors, and legal representatives, waives any and all right to sue Grantee, its elected or appointed officials, representatives, agents, or employees, and any operators, owners, or users of civilian or military Aircraft or airfields, and agrees to dismiss any and all such suits that may be now or subsequently asserted against Grantee, its elected or appointed officials, representatives, agents, or employees, and any operators, owners, or users of civilian or military Aircraft or airfields, for injuries to persons or damage to property arising from noise, vibrations, odors, vapors, exhaust, smoke, dust or other effects that may be inherent in the operation of Aircraft, caused or created by the flight or passage of Aircraft in or through the airspace subject to the easement described in this instrument. Grantor acknowledges that the above-stated consideration is all that Grantor will receive for this easement and no promise for any other or further consideration has been made by anyone. Grantor further acknowledges that Grantor is executing this instrument solely in reliance upon his own knowledge, belief, and judgment and not upon any representations made by any party released or others in their behalf.

4. Grantor shall not build, construct, cause or permit to be built or constructed, or permit to remain on the Property any building or structure that would interfere with the rights conveyed by this instrument or that would violate any local, state, or federal law or regulation regarding the operation of Aircraft or airfields.

5. Grantor shall not use or permit the use of the Property in such a manner as to create electrical, electronic, or other interference with radio, radar, microwave, or other similar means of Aircraft communications, or to make it difficult for pilots to distinguish between airfield navigation lights and visual aids and other lights, or to result in glare or other condition that would impair the vision of pilots, or to otherwise endanger the operation of Aircraft.

6. In the event of any violation of the rights and restrictions contained in this instrument, Grantee shall have the right, at its sole option after giving five (5) days prior notice to Grantor, to use any and all means to remedy the violation. Additionally, Grantee shall have a perpetual easement for ingress to and egress from the Property for the purpose of inspecting or removing any instrumentality that may be causing or contributing to a violation of the rights and restrictions conveyed by this instrument.

APPENDIX 4

7. Grantor acknowledges that the Property is located in an area impacted by Aircraft noise and that present and future Aircraft noise may interfere with the unrestricted use and enjoyment of the Property. Grantor further acknowledge that Aircraft noise may change over time by virtue of greater numbers of Aircraft, louder Aircraft, variations in airfield operations, and changes in airfield and air traffic control procedures.

8. This Avigation Easement and all of the terms and conditions described in this instrument shall run with the land in perpetuity and shall be binding upon Grantor and his heirs, assigns, successors and legal representatives.

9. In the event that one or more of the provisions contained in this instrument or any part thereof or any application thereof shall be held invalid, illegal, or unenforceable in any respect by a court of competent jurisdiction, the validity, legality and enforceability of the remaining provisions shall not be affected or impaired and shall remain in full force and effect.

10. In the event that any civilian or military airfield adjacent to the Property ceases to operate, or if such other circumstances subsequently arise that would obviate the purpose underlying this instrument, then Grantor, his heirs, assigns, successors, and legal representatives, may petition the Board of County Commissioners of Escambia County to terminate this Avigation Easement. If the Board of County Commissioners approves the termination of this Avigation Easement, then it shall promptly execute and record in the public records an appropriate document reflecting the termination.

11. Grantor, for himself and his heirs, assigns, successors, and legal representatives, covenants with Grantee, its successors and assigns, that Grantor is lawfully seized and possessed of the Property in fee simple, has a good right and full power to grant, bargain, sell and convey this Avigation Easement over the Property.

IN WITNESS WHEREOF Grantor has executed this instrument on the date first above written.

APPENDIX 4

GRANTOR:

Witness _____
Print Name _____

Witness _____ By: _____
Print Name _____

STATE OF FLORIDA
COUNTY OF ESCAMBIA

The foregoing instrument was acknowledged before me this _____ day of _____, 2004, by _____. He/She (_) is personally known to me, (_) produced current _____ as identification.

_____
Signature of Notary Public

_____
Printed Name of Notary Public

(Notary Seal)

GRANTOR:

Witness _____
Print Name _____

Witness _____ By: _____
Print Name _____

STATE OF FLORIDA
COUNTY OF ESCAMBIA

The foregoing instrument was acknowledged before me this _____ day of _____, 2004, by _____. He/She is (_) personally known to me, (_) produced current _____ as identification.

_____
Signature of Notary Public

_____
Printed Name of Notary Public

(Notary Seal)

APPENDIX 4

ACCEPTANCE

This Avigation Easement accepted by Escambia County, Florida on the _____ day of _____, 2004, as authorized by the Board of County Commissioners of Escambia County, Florida at its meeting held on the _____ day of _____, 2004.

BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA

_____
Marie Young, Chairman

ATTEST: Ernie Lee Magaha
Clerk of the Circuit Court

_____
Deputy Clerk

(Seal)

APPENDIX 4

GRANTOR:

_____
(name of corporation or other business entity)

Witness _____
Print Name _____

Witness _____
Print Name _____

By: _____
(signature)

_____
(name/title)

STATE OF FLORIDA
COUNTY OF ESCAMBIA

The foregoing instrument was acknowledged before me this _____ day of _____, 2004, by _____ as _____ (title) of _____(name of corporation or other business entity). He/She (_) is personally known to me, (_) produced current _____ as identification.

_____
Signature of Notary Public

_____
Printed Name of Notary Public

(Notary Seal)

APPENDIX 5

Statement of Understanding
City of Virginia Beach and United States Navy

March 15, 2005

PREAMBLE

Representatives of the U.S. Navy, Naval Air Station Oceana, and the City of Virginia Beach, together comprising the Joint Land Use Study sub-committee formed on February 10, 2005 have reached an UNDERSTANDING THAT:

- The meetings and discussions engaged in by the Joint Land Use Study sub-committee represent the most frank and in-depth dialogue concerning encroachment and incompatible development to have ever taken place between the Navy and the City. The Navy and the City will engage in a continuing dialogue with respect to encroachment upon military installations, and with respect to any new or evolving regulations and instructions concerning encroachment.

- As part of the process described below, from this point forward any person, persons or those persons representing any group or organization proposing development that is incompatible with Chief of Naval Operations Instruction 11010.36B of 19 December 2002, *Air Installations Compatible Use Zones (AICUZ) Program*, or otherwise encroaches upon NAS Oceana and its environs, will be asked by the City of Virginia Beach to meet with Navy officials so that:

    - NAS Oceana's mission, and its importance to U.S. Navy mission readiness, national defense and homeland security requirements, can be explained.

    - A description or demonstration of the sounds created by military operations with respect to the type of structures proposed can be given.

    - If no other recourse is available, a request can be made for a voluntary reconsideration of the type of development proposed to one that offends the criteria of the AICUZ program to the least possible degree.

- The Navy and the City understand the value of developing a process whereby the Navy will be informed of, and afforded an opportunity to comment upon, *all* development that may be incompatible with military operations.

APPENDIX 5

1. With regard to the responsibilities of, and the actions by, the Navy and the City regarding the effort to restrain encroachment and incompatible development:

- The Navy and the City both understand that any opinion expressed by the Navy concerning proposed development must be wholly in accordance with Chief of Naval Operations Instruction 11010.36B of 19 December 2002, *Air Installations Compatible Use Zones (AICUZ) Program.*

- The City understands the Navy position is now, and has been, that residential development in areas of 65 dB DNL and greater is discouraged and that this position is in accord with the AICUZ program.

- The Navy acknowledges that the responsibility for enacting, amending, repealing and otherwise developing and promulgating zoning ordinances, codes and laws lies solely with the City of Virginia Beach, subject to statutory and constitutional requirements.

- The Navy acknowledges that under Virginia law, property owners may not be denied reasonable use of their property and may develop their land without approval by the City Council in accordance with established zoning regulations.

    - The Navy and the City acknowledge that they differ in their application of "residential density" when it is used in the context of encroachment and incompatible development. Specifically:

    - The Navy uses "residential density" to refer to the number of dwelling units in a defined area actually in existence at the time that area is discussed.

    - The City uses the term "residential density" to refer to the number of dwelling units in a defined area that would exist if that area were developed to the extent allowed by existing zoning.

    - The General Assembly has enacted legislation requiring disclosure in *any* sale or lease of residential real estate. All disclosures pertaining to Navy aircraft operations contained in any type of real estate or business transaction or agreement must be written in a straightforward, clear and otherwise unambiguous manner. In this regard, the Navy and the City agree to immediately initiate a working group to work in conjunction with the Virginia Real Estate Board to review and, if necessary, re-draft all disclosures currently in use, and to determine whether there exist any instances where disclosures are needed where none now are employed.

- The City has instituted an effective residential sound attenuation program and legislation allowing it to expand this program to certain non-residential uses has been enacted by the General Assembly. Personnel associated with the program must be

fully aware of the varying efficacy of sound attenuation practices, as measured by sound transmission class indicators, when confronted with different sound frequencies generated by Navy aircraft. Greater effort will be made to educate the public, in general, and property owners, in particular, regarding the difference between average noise designations shown on the AICUZ map and event noise experienced in real life. The Navy and the City agree to work collaboratively to assist each other in matters of technical information and instruction in this regard.

2. With regard to the U.S. Navy and NAS Oceana:

- NAS Oceana is the most encroached-upon military airfield in the United States. Encroachment has occurred since the installation's inception, and includes the type of high-density, residential and commercial development that now threatens the viability of the station's mission.

- NAS Oceana officials have discouraged incompatible development around the station since at least the 1960s. Navy policy, as published in pertinent instructions, has also consistently discouraged incompatible development around air installations since before the Noise Control Act of 1972.

- During the late 1970s and early 1980s, the Navy and the federal government undertook a program to buffer the installation from encroachment by purchasing property outright and by purchasing and acquiring easements on surrounding properties in the form of development rights. The Navy acquired these property interests publicly, sometimes in coordination with initiatives of the City of Virginia Beach Development Authority.

- With respect to accommodating the sensibilities of the surrounding communities, NAS Oceana officials have voluntarily modified flight arrival and departure procedures. These modifications have resulted in flight procedures/training that do not replicate actual aircraft carrier operating procedures.

- NAS Oceana is a pre-eminent Navy installation. It is also now, however, a vital component in the architecture of the Defense Department's joint service method of operational planning and execution and in the newly-emerging inter-agency approach to meeting homeland defense requirements.

3. With regard to the City of Virginia Beach and AICUZ-related initiatives:

- The City, since adopting its first Comprehensive Plan in 1979, has worked with the Navy to ensure that the initiatives of the AICUZ program have been included in each subsequent plan amendment.

- Before the revision of the OPNAV Instruction in December 2002, the City made adjustments to the City Zoning Ordinance to bring land use regulations more in line with the requirements of the AICUZ program.

- The City relocated two schools to conform to the Draft F/A –18 C/D Environmental Impact Statement.

- The City secured state enabling legislation requiring sound attenuation in residential structures and has implemented an effective residential sound attenuation program.

- In 2005, proposed legislation requiring Noise Zone/APZ disclosures in all residential real estate transactions and requiring sound attenuation in certain non-residential structures was enacted by the General Assembly.

4. With regard to the City of Virginia Beach and the oceanfront area:

- The establishment of a first class resort at the oceanfront is a strategic priority for the City of Virginia Beach. The principal initiative in this regard has been the investment in the new 19th Street Convention Center. This project is expected to be followed by the adoption of an Old Beach District Plan, as well as a revised the Oceanfront Resort Area Concept Plan, updating that adopted in 1994.

    - Over the past fifteen years, the City of Virginia Beach has invested in other major public projects at the oceanfront resort area including:

    - upgrades to Atlantic Avenue-area streets, sidewalks, utilities and park blocks;

    - the widening of more than three miles of boardwalk and the expansion of the beach for hurricane protection;

    - the expansion of the Virginia Aquarium and Marine Science Center;

    - Old Beach-area neighborhood improvements including major street and utility upgrades; and

    - the construction of a new police precinct, fire and rescue station and public library.

- As a result of these initiatives, the City of Virginia Beach is a major competitor in the tourist and convention industry and strives to maintain its standing. While significant advancements have been made, land use planning and economic goals have only been partially realized, however. The overall aspiration is the rejuvenation of the oceanfront into an area containing neighborhoods and businesses more compatible with a first-class resort and convention destination, consistent with the principles of the Comprehensive Plan. To this end, public and private investment – both in the hundreds of millions of dollars - in the oceanfront area are intended to catalyze further community revitalization and economic growth.

- The retail presence in the oceanfront area consists of many more seasonal than year-round businesses. The City of Virginia Beach believes that seasonal businesses alone do not support the vision of a first-class resort and convention destination.

Accordingly, when the Oceanfront Resort Area Concept Plan is revised, city officials intend to include a reasonable increase in the number of residential units in the oceanfront area, a number sufficient to support quality year-round retail development. This number is anticipated to be less than the aggregate additional number of units allowed by current oceanfront area zoning.

- The current number of units in this area of the City is approximately 7,000. Under current zoning, the maximum number of units allowed is more than double this figure, approximately 16,000.

- The City understands that the Navy is deeply concerned about the impact of aircraft operations on the proposed development of the resort area. The City of Virginia Beach will address these concerns to the greatest extent possible by inviting the Navy, as well as other stakeholders, to participate in the process of drafting the Oceanfront Resort Area Concept Plan. The City recognizes that, in order to meet the objectives of both the City and the Navy, the applicable zoning regulations must be totally restructured. Among the City's objectives is an increase in the number of residential units currently existing, but substantially less than currently allowed.

5. With regard to the City of Virginia Beach and the western portion of the Transition Area, e.g., that portion of the Transition Area west of West Neck Creek, also known as the Interfacility Traffic Area:

- Both the Navy and the City understand the importance of this portion of the Transition Area in any discussion of encroachment in two key regards:

    - this area is largely undeveloped and thus presents the best opportunity to prevent, to the greatest degree possible, further incompatible development; and

    - this area lies beneath the airspace most commonly used by Navy aircraft not only arriving and departing from NAS Oceana, but also transiting between NAS Oceana and NALF Fentress at lower altitudes.

- With regard to particular means to restrain encroachment and incompatible development inside the Transition Area:

    - The Navy acknowledges that the Virginia Beach Comprehensive Plan now contemplates development with residential density not to exceed one residential dwelling unit per developable acre, but that with few exceptions current zoning does not allow this density.

- The Navy and the City further acknowledge that, according to AICUZ restrictions, residential development in areas of 65dB DNL and greater is not compatible with airfield operations. The City proposes the following:

- For those portions of the Interfacility Traffic Area that lie within the greater than 75 dB DNL Noise Zone, the City reaffirms existing planning policy that no additional residential units above those allowed by right should be permitted. In Agricultural Zoning Districts, the maximum by-right density is one residential lot per 15 acres of land.

- For those portions of the Interfacility Traffic Area that lie within the 70-75 dB DNL Noise Zone, the City will amend its Comprehensive Plan to reflect the need to retain predominantly agricultural zoning, in which residential density not exceeding one dwelling unit per five acres is allowed by conditional use permit.

- For those portions of the Interfacility Traffic Area that lie within the 65-70 dB DNL Noise Zone, the Comprehensive Plan will continue to contemplate residential density not exceeding one unit per developable acre.

- The Navy and the City acknowledge that preserving undeveloped property in the Transition Area is a major priority. Any initiatives of other agencies that advance mutually beneficial outcomes, including environmental protection and wetland mitigation, should be vigorously explored.

6. With regard to other AICUZ-related issues:

- The Navy and the City recognize that "by-right" development, e.g., development allowed without the approval by the City Council, sometimes results in development that is incompatible with military operations.

- The Navy acknowledges that the City has certain legal responsibilities regarding "by-right" development (i.e., development that is allowed without *specific* approval of the City Council) and that, in such cases, review and approval is ministerial, not discretionary. In those cases in which development is not "by-right," thus requiring approval City Council, the Navy also acknowledges that the City must permit a reasonable use of the property.

- The Navy and the City recognize that transportation is an issue of significant concern. Future development contemplated in the Comprehensive Plan will require a range of alternative transportation improvements, which are recommended as part of the Master Transportation Plan. The Navy and the City believe that strategic growth management plans should focus on three approaches concerning transportation:

    - Public facility improvements are prioritized and implemented as quickly as possible per available federal, state and local funds so that that adequate public facilities and services are available before, during and immediately after development to accommodate inter-installation movement by large vehicles.

    - Growth and development are oriented to appropriately designated areas; and

APPENDIX 5

- The public and the Navy are effectively involved in any planning process, as described herein.

APPENDIX 6
Federal Sources of Funding

The United States Government offers a variety of programs that can be used to fund open space and conservation lands implementation. These are described as follows:

Community Development Block Grant Program
http://www.hud.gov/progdesc/cdbgent.cfm
The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. Several communities have used HUD funds to develop greenways. Grants from this program range from $50,000 to $200,000 and are either made to municipalities or non-profits. There is no formal application process.

Conservation and Reinvestment Act (CARA)
Federal conservation funds are available through the Conservation and Reinvestment Act (CARA). CARA will provide $12 billion over six years beginning in FY 2002. Funding for each CARA category is subject to annual appropriations, however minimum levels have been guaranteed. A sample of federal funding sources is discussed below. Additional programs are described on the EPA website (http://www.epa.gov/owow/watershed/wacademy/fund.html).

Conservation Reserve Program
http://www.fsa.usda.gov/dafp/cepd/crp.htm
The U.S. Department of Agriculture, through its Agricultural Stabilization and Conservation Service, provides payments to farm owners and operators to place highly erodible or environmentally sensitive landscapes into a 10-15 year conservation contract. The participant in return for annual payments during this period, agrees to implement a conservation plan approved by the local conservation district for converting these sensitive lands to a less intensive use. Individuals, associations, corporations, estates, trusts, cities, counties and other entities are eligible for this program. This program can be used to fund the maintenance of open space and non-public use greenways along water bodies and ridge lines.

Environmental Quality Incentive Program (EQUIP)
The Environmental Quality Incentive Program (EQUIP) is a federal program authorized in the 1996 Farm Bill that provides assistance to agricultural producers in complying with federal, state, and other environmental laws. Assistance provided through this program may be in the form of technical, cost-sharing, financial incentives, and producer education related to a broad range of soil, water, air, wildlife, and related natural resource concerns. The EQUIP assistance programs are available to crop, forage and forest products producers

as well as wetlands and wildlife landowners who choose to enter into 5- and 10-year contracts based on conservation plans for their operations. These conservation plans may include a combination of structural, vegetative, and land management components. The program prioritization is led, coordinated, and implemented on the local level.

Farmland Protection Program

The Federal Farmland Protection Program (FPP) was created in the 1996 Farm Bill. This program is administered by the Natural Resources Conservation Service (NRCS) and provides federal matching funds for state and local farmland protection efforts. Funds are used to help purchase development rights to keep productive farmland in agricultural uses. Through this program, the USDA provides up to 50 percent of the fair market easement value to acquire conservation easements or other interests from farmland owners. To be eligible for funding, a state, county or local jurisdiction must have a complementary program of funding for the purchase of conservation easements, and grants are awarded competitively through the USDA's Natural Resources Conservation Service (NRCS). (For more information visit http://www.info.usda.gov/nrcs/fpcp/fpp.htm).

Hazardous Mitigation Grant Program

This program provides financial assistance to state and local governments for projects that reduce or eliminate the long-term risk to human life and property from the effects of natural hazards. The grant program has 75 percent federal and 25 percent local contribution. The nonfederal share may be met with local cash contributions, in-kind services, or certain other grants such as Community Development Block Grants. The Federal Emergency Management Agency makes the final decisions on project eligibility, but the state agencies administer the program. Eligible projects include acquisition of property, retrofitting of buildings, development of standards with implementation as an essential component, and structural hazard control or protection measures such as dams and sea walls.

Land and Water Conservation Fund

(http://www.ncrc.nps.gov/programs/lwcf/)

The Land and Water Conservation Fund is the largest source of federal money for park, wildlife, and open space land acquisition. The program's funding comes primarily from offshore oil and gas drilling receipts, with an authorized expenditure of $900 million each year. However, Congress generally appropriates only a fraction of this amount.

LWCF funds are apportioned by formula to all 50 states, the District of Columbia and territories. Cities, counties, state agencies, and school districts are eligible for LWCF fund monies. These funds can be used for outdoor recreation projects, including acquisition, renovation, and development. Projects require a 50 percent match.

For more information contact:
U.S. Department of the Interior
National Park Service, Recreation Programs, Room MIB-MS 3622
1849 C Street NW
Washington, DC 20240
(202) 565-1200
http://www.ncrc.nps.gov/lwcf/

Nonpoint Source Implementation Grants (319 Program)

The 319 Program provides formula grants to states so that they may implement nonpoint source mitigation projects and programs in accordance with section 319 of the Clean Water Act (CWA). Nonpoint source pollution reduction projects can be used to protect source water areas and the general quality of water resources in a watershed. Examples of previously funded projects include installation of best management practices (BMPs) for animal waste; design and implementation of BMP systems for stream, lake, and estuary watersheds; and basin-wide education programs. These grants allow for 60 percent of the cost of the project to be funded federally with a 40 percent local match. For more information contact:
U.S. Environmental Protection Agency
Office of Wetlands, Oceans and Watersheds
Nonpoint Source Control Branch (4503F)
Ariel Rios Bldg., 1200 Pennsylvania Ave., NW,
Washington, DC 20460
(202) 260-7100
http://aspe.os.dhhs.gov/cfda/p66460.htm
http://www.epa.gov/owow/nps/

Pittman-Robertson Act

The Federal Aid in Wildlife Restoration Act, popularly known as the Pittman-Robertson Act, provides funding for the selection, restoration, rehabilitation, and improvement of wildlife habitat, and wildlife management research. Funds from an 11-percent excise tax on sporting arms and ammunition are appropriated to the Secretary of the Interior and apportioned to states on a formula basis for covering costs (up to 75 percent) of approved projects. The program is cost-reimbursement in nature, requiring states to apply for reimbursement of up to 75 percent of project expenses. At least 25 percent of the project costs must be provided by the state and originate from non-federal sources.

Rivers, Trails, and Conservation Assistance Program

The National Parks service operates this program aimed at conserving land and water resources for communities. Eligible projects include conservation plans for protecting these resources, trail development, and greenway development.
http://www.ncrc.nps.gov/programs/rtca/ContactUs/cu_apply.html

Transportation and Community and System Preservation Pilot Program (TCSP)
The TCSP provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships between transportation and community and system preservation and to identify private sector-based initiatives. The TCSP is a Federal Highway Administration program being jointly developed with the Federal Transit Administration, the Federal Rail Administration, the Office of the Secretary, the U.S. Department of Transportation, and the U.S. EPA. This program has been authorized $20 million for 1999, and $25 million is authorized for each of the years 2000-2003. States, MPOs, and local governments are eligible to receive planning and implementation grants for projects that: reduce impacts of transportation on the environment, reduce the need for costly future infrastructure investments, and improve the efficiency of the transportation system. Projects involving partnerships among public and private sectors are given priority.
http://www.fhwa.dot.gov/tcsp/

Transportation Equity Act for the 21st Century Funding Programs
While generally a transportation-based program, the Transportation Equity Act for the 21st Century (TEA-21) funds programs to protect the environment. Through increased funding to the Surface Transportation Program (STP) and the National Highway System (NHS), TEA-21 allows for more environmental projects. States may spend up to 20 percent of their STP dollars (used for transportation facility reconstruction, rehabilitation, resurfacing, or restoration projects) for environmental restoration and pollution abatement projects. Additionally, each state sets aside 10 percent of STP funds for transportation enhancement projects, which can include acquisition of conservation and scenic easements, wetland mitigation, and pollution abatement, as well as scenic beautification, pedestrian and bicycle trails, archaeological planning, and historic preservation. For more information contact:
http://www.istea.org/
U.S. Department of Transportation
Federal Highway Administration
400 7th Street, SW, Washington, DC 20590
(202) 366-5004
http://www.fhwa.dot.gov/tea21/

Watershed Protection and Flood Prevention (Small Watersheds) Grants
The USDA Natural Resources Conservation Service (NRCS) provides funding to state and local agencies or nonprofit organizations authorized to carry out, maintain and operate watershed improvements involving less than 250,000 acres. The NRCS provides financial and technical assistance to eligible projects to improve watershed protection, flood prevention, sedimentation control, public water-based fish and wildlife enhancements, and recreation planning. The NRCS requires a 50 percent local match for public recreation, and fish and wildlife projects.
http://www.epa.gov/owow/watershed/wacademy/fund/prevent.html

Wetlands Reserve Program

The Wetlands Reserve Program is administered through the Department of Agriculture's Natural Resources Conservation Service. This program provides landowners with financial incentives to restore and protect wetlands in exchange for retiring marginal agricultural land. Landowners may sell a permanent or a 30-year conservation easement, or they may enter into a cost-share restoration agreement for a minimum of 10-years. Participating landowners voluntarily limit future agricultural use of the land. They continue to own and control access to the land, and they may lease the land for recreational activities. The amount of funding available in a given fiscal year depends on the amount of acres Congress permits to be enrolled in the program, and a per acre value is assigned in each state. For more information contact:

U.S. Department of Agriculture
Natural Resources Conservation Service
Watersheds and Wetlands Division
P.O. Box 2890, Washington, DC 20013
(202) 690-0848
http://www.wl.fb-net.org
http://aspe.os.dhhs.gov/cfda/p10072.htm
http://www.nrcs.usda.gov/programs/wrp/
http://www.ngpc.state.ne.us/wildlife/wrp.html

City of Chesapeake, Virginia

Final Report of the

Chesapeake Jet Noise Task Force

May 2, 2001

Signature Page

Mr. Marion G. "Joe" Pine, Jr.
Chairman

Ms. Peggy Hayes
Vice Chairman

Mr. Art Chapman

The Honorable John E. Allen

Ms. Tammie Bebout

Mr. Jim Tincher

NOT AVAILABLE
Ms. Jenneal Wiggins

NOT AVAILABLE
Mr. Gale Cross

NOT AVAILABLE
Mr. Christopher Falk

Mr. Glenn Hampton

Ms. Betty Ridgeway
Tidewater Builders Assoc.

Ms. Karen Gaskins
Greater Hampton Roads
Association Of Realtors

Mr. John Oliphant
Chamber of Commerce
Chesapeake Division

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Executive Summary

In August 2000, City Council decided to form a task force to address citizen concerns regarding jet noise associated with Fleet Carrier Landing Practices (FCLPs) at Fentress Auxiliary Landing Field. Additionally, the Jet Noise Task Force was directed to provide recommendations for an official Chesapeake position on the potential home basing of the newer F/A-18E/F "Super Hornets" at Naval Air Station, Oceana, and the impact of their arrival on citizens within the Fentress Overlay District. The Task Force was comprised of citizen volunteers selected by City Council. The composition of thirteen voting members included seven individuals who live within the designated Fentress Noise Zones, three individuals from other sections of Chesapeake, and representatives from the Chamber of Commerce, Tidewater Builder's Association and the Hampton Roads Realtors Association.

Since September of 2000, the Jet Noise Task Force has conducted an examination of the problems associated with jet noise in the vicinity of Fentress Auxiliary Landing Field. Our purpose was to study two issues: current noise disturbances, and the potential impact of basing the newer F/A-18 E/F "Super Hornet" aircraft at NAS Oceana with FCLPs conducted at Fentress. We initially considered these issues as distinctly separate; further examination proved the issues to be closely related.

There were many related issues that came up in our discussions, such as increased accident potentials, fuel spills, effects on the Oceana community, and

economic impacts; however, we narrowed our focus to address only the noise issues at Fentress, thus keeping our investigation more in line with our tasking. This report jointly addresses the noise issues from the perspectives of short-term mitigation efforts as well as longer-term improvements.

The Fentress jet noise problem affects approximately 2,000 homes, roughly three percent of Chesapeake households, located in or immediately adjacent to the three AICUZ noise zones associated with Fentress Airfield. While the number of Chesapeake citizens affected is relatively small, the City has an obligation to address these concerns.

The level of activity at Fentress, and the intensity of noise, has increased significantly with the arrival of the F/A-18 C/D "Hornets". As a result, more citizens are affected, and some significantly more so.

The Navy has attempted over the years to advise citizens of the potential for increased noise levels. These efforts have included participation in Planning Commission and City Council meetings, purchasing restrictive covenants/ easements (air rights), establishing AICUZ and Accident Potential Zones around Fentress, and publishing flight schedules. Additionally, the Navy has taken steps to alleviate some of the noise problems by amending flight patterns, installing a reference beacon, and establishing a noise complaint hotline.

Despite the Navy's efforts, many citizens in the area continue to be concerned with the noise levels, primarily due to the current use of aircraft which are louder

than those used at Fentress between 1992 and 1998. Additionally, military training commitments have resulted in an increased level of activity at Fentress. Of special concern to the citizens is the increased use of Fentress between the hours of 11:00 p.m. and 6:00 a.m.

At a public forum held on December 5, 2000, the Jet Noise Task Force solicited comments from Chesapeake citizens. A very small number of citizens commented that the only acceptable answer is for the Navy to cease flying at Fentress. A larger number would accept the Navy's stopping or reducing flights after midnight. Most citizens commented that they would prefer to see a return to a lighter flight schedule, a tighter flight pattern, and restricted hours of night flying.

There is growing support in the area for the establishment of an additional outlying field to relieve some of the usage of Fentress. The Navy has stated that completion of any such outlying field would be, at best, five years away. In the meantime, this report provides the Task Force's recommendations for alleviating some of the problems.

As the Task Force addressed the potential of the Super Hornets coming to the area, we considered the good of the whole community. It was the Task Force's intent to honestly evaluate the positive impacts along with the negative effects, and to recommend steps to ensure that the negative impact is minimized.

Jet Noise Issues, Findings and Recommendations

Jet Noise associated with Fleet Carrier Landing Practices (FCLPs) at Fentress Auxiliary Landing Field has become a significant citizen issue within the past two years. The increase in citizen complaints appears to coincide with the arrival of the F/A-18C/D "Hornets" aircraft from Naval Air Station, Cecil Field, Florida. The Jet Noise Task Force investigated several areas of concern.

1. ZONING/REZONING

Problem: As population density increases in the Fentress area, more citizens are affected by jet noise.

Findings: In addition to the impact felt by the arrival of the F/A-18s, rezonings in the affected areas by the elected leadership of the City of Chesapeake, have resulted in a greater residential population density, thus bringing more residents into direct contact with the activity at Fentress. In all land use decisions in the Fentress area, personal private property rights and the impact of jet noise needs to be balanced.

Recommendations:

(a) Proper and appropriate applications for the rezoning of property in the Fentress area should continue to be considered. However, the Planning Department and Planning Commission should continue to consider jet noise and its possible impact on the proposed land use when making recommendations to City Council concerning any such rezoning requests.

Information such as the AICUZ noise zones should be a part of this consideration. City Council should give great weight to recommendations of the Planning Commission in this regard. City Council should strongly consider the City's Comprehensive Land Use Plan when considering rezonings in the Fentress area that would increase population density.

(b) Should the F/A-18 E/F aircraft become locally based, using Fentress Airfield for Fleet Carrier Landing Practice, the City should proceed with the Joint Land Use Study (JLUS) in conjunction with the Navy. City Council should give great weight to the land use recommendations that result from such study.

(c) The Navy's purchase of restrictive covenants (air rights) over certain acreage surrounding Fentress Airfield has assisted the City in its land use planning. The additional purchase of restrictive covenants, in the form of mandatory or voluntary election, is a properly applied land use tool; the City should vigorously encourage the Navy to pursue additional purchases. These air rights purchases will compensate landowners for relinquishing development rights, and serve to limit residential development surrounding Fentress. This may reduce the potential number of residents who would otherwise be affected by the jet noise.

2. FENTRESS NOISE SENSITIVITY ZONE

Problem: The designated AICUZ noise zones do not include all areas where noise may adversely affect residents.

Findings: The Task Force received complaints from residents living as far as five miles from Fentress indicating that noise from Fentress is affecting their quality of life even though they reside well outside the AICUZ zones. Transmission of noise is affected by many factors such as wind velocity and direction, humidity, temperature, and tree lines. The AICUZ maps were modeled without environmental effects and therefore do not present a complete picture.

Recommendation:

Create a Fentress Noise Sensitivity Zone around Fentress that follows the contours of the AICUZ designations. This zone should encompass the existing AICUZ zones plus a one-mile buffer beyond the less than 65 dB Ldn zone (AICUZ zone 1).

3. BUILDING CODES

Problem: There is a concern among the Task Force members that some houses within the AICUZ noise zones may not be constructed using sound attenuation construction practices, as laid out in the Uniformed Statewide Building Code, which could significantly reduce the effects of jet noise upon the home's residents.

Findings: Insufficient evidence exists to either substantiate or alleviate the concerns regarding this issue. Noise attenuation practices, as outlined in Code Section 1214 of the Uniform Statewide Building Code, have been incorporated into the City building codes for homes built within the AICUZ noise zones.

Recommendations:

(a) The City must ensure strict and uniform compliance with the Uniform Statewide Building Code that provides for sound attenuation within the AICUZ zones.

(b) To the extent permitted under state law, change the current city ordinance so that if a lot has any portion falling in multiple noise zones, that lot should be required to meet the criteria of its most restrictive zone.

4. DISCLOSURE

Problem: How to properly and adequately disclose the potential for jet noise to developers, builders, and/or homebuyers prior to contractual obligation.

Findings: Many citizens commented that, although they had been informed of the potential for jet noise, they had never realized how bad it could be. In some cases, they checked with neighbors and were told that there was only occasional noise. However, since the marked increase in activity, they, as well as their neighbors, have found it to be intolerable at times. Chesapeake Code Section 12-204 currently requires noise zone disclosure only to owners of property located in AICUZ zone 3 (greater than 75dB Ldn). Realtors belonging to the Real Estate Information System (multiple listing service) voluntarily disclose noise zones to potential buyers and/or tenants of properties in AICUZ zones 1 and 2, in addition to the mandatory requirement for zone 3. Public complaints from citizens residing in all three AICUZ zones indicate a need for more complete disclosure. The Virginia Beach Code for noise disclosure is based on numerical

decibels patterned after the Navy AICUZ Noise Zones. The Chesapeake Code is still based on numerical zones which leads to confusion among the public in Hampton Roads. Additionally, numerical decibel indicators do not adequately convey the magnitude of sound disturbance, as they do not quantify the measurement of single, repeated events.

Recommendations:

(a) Adopt an ordinance to amend the City Code section 12-204 to require a more complete disclosure to any potential purchaser and/or tenant of property that lies wholly or partially within any of the designated noise zones and the proposed noise sensitivity zone identified in Section Two above. The amendment should also provide for appropriate legal remedies in the event of non-compliance.

(b) The Chesapeake Noise Disclosure Ordinance should use the AICUZ decibel designations rather than the numerical zone designations. Virginia Beach uses the decibel designations in their disclosure requirements, and this would standardize disclosure throughout the area.

(c) The City should develop a Fentress Jet Noise Disclosure Statement, in recordable form, to include at a minimum:

(1) Scientific information concerning the expected noise levels in each of the designated zones.

(2) A comparison of numerical decibel levels with everyday events such as lawn mowers, emergency sirens, automobile engines, etc.

(3) A statement that although the decibel levels are averages, a peak noise event of approximately 110 decibels may occur with each landing or take off from Fentress.

(4) A single page map of a convenient size outlining all AICUZ zones and their relationship to major roadways in the affected areas of Chesapeake. For convenience, the Fentress Jet Noise Disclosure Statement could be printed on the reverse side.

(d) The City should require every seller/landlord of property that lies partially or wholly within the AICUZ noise zones or the proposed Fentress Noise Sensitivity Zone to disclose the noise zone to every potential purchaser/tenant prior to any contractual obligation. The purchaser/tenant must sign the Fentress Jet Noise Disclosure Statement, and initial the map indicating the location of the property within the AICUZ noise zones and proposed Fentress Noise Sensitivity Zone. The City should provide for appropriate legal remedies for non-compliance.

(e) The signed Fentress Jet Noise Disclosure Statement should be filed for recordation with the Clerk of the Court at the time of title transfer on all properties located within the AICUZ Noise Zones or the proposed Fentress Noise Sensitivity Zone.

(f) Noise zone information for each piece of property, located within the AICUZ Noise Zones or the proposed Fentress Noise Sensitivity Zone, must be readily available to the public. This information should be available through

Chesapeake's real estate tax records similar to the disclosure of mosquito districts.

(g) Noise zone information needs to be disseminated routinely to every owner of property that lies partially or wholly within the AICUZ noise zones or the proposed Fentress Noise Sensitivity Zone. The annual tax assessment statement could be annotated to include this information.

5. COMMUNICATIONS

Problem: There is no formal liaison relationship between the governing body of the City of Chesapeake and the Navy.

Findings: The City's web site has a link for accessing flight schedules and general information regarding Fentress. This information is limited in scope. Publishing specific aircraft types and when they are scheduled to fly would be more helpful. The Navy operates a phone line for noise complaints, but this line is not dedicated solely to that purpose. Due to limits on this single phone line, citizens attempting to make noise complaints can spend 30 to 60 minutes or more attempting to voice their complaint. The Navy has indicated that all callers lodging noise complaints are to receive a follow-up call from the Navy. The Task Force determined through citizen interviews and personal experiences that this procedure is not followed.

Recommendations:

(a) The City should assume the responsibility of informing the public about Fentress flight operations and the potential impact on residents by:

(1) Expanding the web site to include better information about levels of activity at Fentress, and provide information about noise mitigation efforts underway.

(2) Establishing a permanent Navy liaison representative within the Public Communications Department to maintain open and frank communications with the Navy and the citizens.

(3) Designate a permanent City Council Member liaison to the Navy.

(b) The City should recommend the Navy improve the noise complaint hotline by:

(1) Dedicating this line solely as a hotline.

(2) Providing additional lines for this purpose.

(3) Installing features such as rotary stacking, and a computerized announcement indicating approximate hold time.

(4) Enforcing the call back policy that the Navy has said many times is already in effect.

(5) The cost of these improvements could be borne as a cooperative effort between the Navy, the Cities of Chesapeake and Virginia Beach, and local phone companies as a public service.

(c) Dramatically increased levels of operations occur approximately three to five times per year. The City should be responsible for providing a source of information that citizens can access for news concerning abnormal flight operations, such as may occur due to the convergence of multiple training schedules. Advance notice of impending abnormal operations should be provided via both the Navy and the City web sites, community bulletin board

announcements on WCTV-48, notices in the Chesapeake Shopper and the Clipper, and the City's Answer Line.

(d) The City's web site should include a direct link with the Navy's Oceana web site for noise-related information and complaints.

(e) The City should develop pamphlets and videos concerning operations at Fentress.

6. SCHEDULING/HOURS OF OPERATION/PATTERN MAINTENANCE

Problem: Aircraft varying from the proper pattern and altitude, flying throughout the night, create an exaggerated noise situation for residents near Fentress.

Findings: The Navy has an agreement with both the cities of Virginia Beach and Norfolk to cease Fleet Carrier Landing Practice (FCLP) flights at 11:00 p.m. Accordingly, Fentress is the designated facility for these night flights. A review of the published flight schedules for Oceana and Fentress for the period January 15, 2001 through February 4, 2001 indicates Oceana scheduled for 5 hours and 15 minutes of FCLPs, while Fentress was scheduled for 268.5 hours. Flights past 1:00 a.m. were scheduled on seven nights during this 21-day period.

The published pattern altitude at Fentress is 800 feet on the downwind approach. Frequently, the planes are not adhering to this altitude. If the pilot begins the turn into final approach at too low an altitude, he must compensate with more engine power to avoid losing too much altitude in the turn. The increased engine speed and the lower altitude combine to raise the ambient noise level significantly.

Recommendations:

(a) The City should negotiate a reduction in flights at Fentress past 1:00 a.m. with the exception of periods of carrier workups.

(b) The City should pass the following recommendations to the Navy:

(1) The Navy should require pilots to use the Fentress TACAN navigation system for aid in proper pattern maintenance at Fentress.

(2) The Navy should investigate elevating the pattern altitude at Fentress to 1000 feet. This is the altitude flown at Oceana, and the FAA required altitude for commercial aircraft over residential areas.

(3) The Navy should consider use of a dedicated radar repeater for monitoring the Fentress pattern during FCLPs. This repeater should be installed at Fentress for use by the Landing Signal Officers, and should display each individual airplane's transponder altitude readout.

(4) Once installed, should the TACAN and radar repeater not be available due to mechanical malfunction, the Navy should discontinue FCLPs at Fentress until one of these systems is returned to service.

(5) The Navy should consider tighter scheduling, concentrating events instead of spreading a number of flights over the entire night.

(6) The City should encourage the Navy to erect signal lights on existing Virginia Power Towers (not telephone poles) that lie in the AICUZ zones, providing a visual marker for pilots to stay in their correct flight pattern.

7. EIS POSITION

The Jet Noise Task Force was asked to provide to the City Council a recommended position for the Environmental Impact Statement. Realizing the economic impact of the military in the community at large, the Task Force studied numerous issues surrounding the potential impact of the relocation of F/A-18 E&F "Super Hornets".

The City has a responsibility to contain encroachment upon Fentress as much as feasible, limiting population density in the area, as well as requiring high construction standards. With rising population in the Fentress area, more citizens are exposed to jet noise; additionally, further encroachment may bring increased risk of casualties should one of the jets have a catastrophic accident.

The Jet Noise Task Force therefore recommends the City of Chesapeake accept the F/A-18 E&F "Super Hornets" as an economic benefit to the entire community, but only under the following circumstances:

A. Any Navy proposal to base F/A-18 E&F aircraft at Oceana must include provisions for an alternate outlying field to relieve much of the traffic at Fentress.

B. As per Section One of this report, the City should give great weight to noise concerns when considering property rezonings within the affected Fentress area. The City should participate in the Joint Land Use Study (JLUS) in conjunction with the Navy if NAS Oceana is selected for F/A-18 E&F aircraft home basing and Fentress continues to used for FCLPs. The City should

vigorously encourage the Navy to purchase additional air rights in the Fentress affected area.

C. As per Section Two of this report, the City should effect strict compliance with sound attenuation practices as required by building codes.

D. As per Section Three of this report, the City should amend real estate disclosure practices to adequately advise property purchasers and lessors of the potential for jet noise in the affected area.

E. The City should implement procedures to improve communications with affected citizens, as per Section Five of this report. The City should strongly urge the Navy to implement communications improvements as outlined in Section Five of this report.

F. The City should strongly urge the Navy to implement procedures outlined in Section Six of this report in reference to maintenance of flight patterns and scheduling of operations. The City should negotiate with the Navy to reduce flights at Fentress past 1:00 a.m.

G. The City and the Navy must maintain, and strengthen, liaison efforts to ensure continued cooperation in mitigating noise issues, and to foster compatibility between the needs of Chesapeake residents and the training requirements of the Navy.

Chronology of Events

August 8, 2000

City Council appointed a Jet Noise Task Force with a two-fold mission: to explore possible mitigation strategies concerning current FCLP (Field Carrier Landing Practice) operations at NALF Fentress, and to consider possible positions for the City to address concerning the Environmental Impact Statement which will help determine the placement of the F/A-18 E&F aircraft. Vice Mayor Cosgrove and Council Member Ritter are appointed to serve as council liaisons to the task force.

September 12, 2000

At a City Council work session, Capt. William Zobel presented a briefing on current jet noise issues, and Mike Davis presented a briefing on the Joint Land Use Study (JLUS) for the Department of Defense.

Task Force members were present at this work session.

September 19, 2000

Capt. John Schick, USN (Ret), Chairman, briefed Council about the goals and activities of Citizens Concerned About Jet Noise (CCAJN).

Task Force members were present at this work session.

September 20, 2000

The first meeting of the Jet Noise Task Force was held at Butts Road Intermediate School. This organizational meeting included Vice Mayor Cosgrove and Council Member Ritter.

September 27, 2000

The Task Force began regular weekly meetings to study issues and consider potential solutions, in order to advise City Council as requested.

October 16, 2000

Members of the Task Force attended night Field Carrier Landing Practice (FCLP) at Fentress to familiarize themselves with FCLP procedures and factors affecting the pilot's ability to mitigate noise.

October 21, 2000

Members of the Task Force visited Oceana Naval Air Station for a briefing on jet noise mitigation procedures and a tour of the flight simulator facility.

November 15, 2000

The Task Force selected a member to serve as a liaison to the Virginia Beach Jet Noise Task Force. However, that Virginia Beach Task Force dissolved before the liaison is accomplished.

December 5, 2000

The Task Force conducted a public forum to receive citizen input on problems associated with jet noise in the Fentress area. This forum was conducted in the evening at Butts Road Intermediate School. Written and oral input was received and interviews were conducted when requested.

April 25, 2001

The Task Force completed its written report with recommendations for City Council. The Task Force will be scheduled to present its findings before Council on June 20. Regular weekly meetings are discontinued, with special meetings called by the Task Force Chairman when necessary.

October 22, 2000

The Honorable John A. Cosgrove
Vice Mayor, City of Chesapeake
306 Cedar Road
Chesapeake, Virginia 23322

The Honorable Debbie Ritter
City Council Member, City of Chesapeake
306 Cedar Road
Chesapeake, Virginia 23322

Dear Vice Mayor Cosgrove and Councilwoman Ritter,

The Mayor's Task Force on Jet Noise is actively seeking additional information in order to more fully develop our recommendations to the Mayor and City Council. In this vein we have prepared several questions. Since the questions will undoubtedly be answered by numerous departments we are asking for your help, as ex-officio members, in obtaining the requested information. The list of questions follow:

1. What was the city's input to the F/A-18 C/D transition from Cecil Field?.
2. What was the overriding reason for approving the re-zoning of the Herman Hall property?
3. What does the city require in form of disclosure concerning the AICUZ?
4. Who is required, by the city, to make the disclosure?
5. When did required disclosure start?
6. What event, in the buying or development cycle, triggers disclosure?
7. According to the city and state, when is disclosure officially required to be given to a perspective buyer?
8. What has the population growth (residential) been within the Fentress Overlay District since 1980?
9. In terms of property appreciation, how has residential property, within the Fentress Overlay District, faired when compared to comparable properties in Chesapeake since 1980?
10. What new requirements in terms of zoning and development have been instituted since the rewrite of the Fentress Overlay District?
11. What sound abatement is required for new residential development within the Fentress Overlay District?

Please accept our appreciation in advance for assisting us in this matter.

Respectfully,

M.G. "Joe" Pine, Jr.
Chariman
Mayoral Task Force on Jet Noise

CITY OF CHESAPEAKE

November 11, 2000

Commander Philip Logan
Commander-in-Chief, U.S. Atlantic Fleet
CODE N4683
1279 Franklin Street
Norfolk, VA 23511-2492

Dear Commander Logan,

The Chesapeake Task Force on Jet Noise is well into its fact-finding phase. The complexity of the issue makes it necessary for us to gather as much information as possible before submitting our final recommendations to City Council. You and your staff have been extremely cooperative and forthcoming when fielding our informal inquiries, and for that, we sincerely thank you.

We have compiled a list of remaining questions regarding ongoing noise mitigation efforts and the potential relocation of the F/A 18 E/F aircraft to Oceana. The questions follow:

1. What are the allowable variances in altitude throughout the FCLP flight pattern at Fentress?
2. What altitude monitoring capability currently exists at Fentress?
3. What additional pattern monitoring capabilities are being looked at for the future?
4. Where is the designated holding area, and at what altitude, for aircraft waiting to enter the pattern at Fentress?
5. What initiatives, besides pattern monitoring, is the Navy researching to mitigate the noise situation?
6. What else can be done to reduce the number of jet operations at Fentress after midnight?
7. What will it cost the Navy in time, money and inconvenience to activate an outlying field to reduce the load at Fentress? (estimates only)
8. Given the Navy can find a suitable alternative to Fentress, is three to five years a reasonable estimate of the time required to activate it?
9. Do aircraft transiting to and from the Dare County Range fly over Fentress, and if so, at what altitude?
10. What is the Landing Signal Officer's responsibility during operations at Fentress?
11. Could the Navy provide the Task Force with a map showing the properties over which the Navy owns development rights in the vicinity of Fentress?

12. Our understanding is that the current AICUZ maps were drawn using a base altitude of 1000 feet. Will the EIS for the F/A-18 E/F reflect changes to the AICUZ zones based on an 800 foot pattern, normally flown at Fentress, or will they still reflect a 1000 foot base altitude?
13. Could a separate AICUZ map, based on an 800-foot pattern, be developed for the Fentress area?
14. Has the Navy conducted noise studies performed on the F/A-18 at other than 1000 feet?
15. Would the Navy be willing to add a statement on the AICUZ map indicating the peak noise in decibels for an F/A-18 single incident at 800 feet?
16. Has the Navy ever conducted any studies on the emotional and physical effects of jet noise exposure?
17. Can anything be done, within reason, to re-engineer the F/A-18 for quieter operation?
18. The noise Hotline is a source of great concern for some citizens. What is the current procedure for the Hotline and how many phone lines are available for this service?
19. Can the system be further improved to include such features as the rotary stacking of calls, automatic call back when a line is free or other features which may improve community interaction?
20. What is the current follow-up call back policy? Many people comment that they have never received a call back.

Thank you in advance for assisting the Task Force during this important research process. If you need to speak with me directly to discuss one or more of the questions, I can be reached at 546-0641 or emailed at mpine1@home.com. I look forward to working with you in the near future.

Sincerely,

Mr. M. G. "Joe" Pine, Jr
Chairman
Chesapeake Jet Noise Task Force

Chesapeake
VIRGINIA

City of Chesapeake
Department of Planning

MEMORANDUM

TO: COUNCIL MEMBER DEBBIE RITTER

FROM: BRENT R. NIELSON, PLANNING DIRECTOR

THROUGH: JOHN L. PAZOUR, CITY MANAGER

DATE: JANUARY 19, 2001

RE: **MAYOR'S TASK FORCE ON JET NOISE**

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In response to your memo dated January 8, 2001, Planning offers the following information as requested:

Question 2:

What was the overriding reason for approving the re-zoning of the Herman Hall property?

Response:

Attached are City Council minutes regarding this application. Although specific findings are not provided, it appears that the overriding reason is that the Navy did not purchase the property's development rights in the past nor did the Navy have funding to purchase these rights in the future.

Question 8:

What has the population growth (residential) been within the Fentress Overlay District since 1980?

Response:

The Planning Department does have the capacity to determine the population growth over time within the Fentress Overlay District since there is no base-line data from which to base our calculations. The Fentress Overlay District boundaries do not match the boundaries from which population statistics are developed. However, the population within the general vicinity has increased 22.6% since 1990. The population of this area has increased from 2,224 in 1990 to 2,727 in 2001.

The area from which these estimates have been generated includes Statistical Areas 89111, 89112, 89210, 92011, 92012, and 92420. This area is bounded to the north by the Albermarle Canal, to the south by Land of Promise Road, to the east by Centerville Turnpike, and to the west by the Chesapeake / Virginia Beach city-line. The majority of the growth has occurred in the northwest portion of this area.

Question 10:

What new requirements in terms of zoning and development have been instituted since the rewrite of the Fentress Overlay District?

Response:

The Fentress Overlay District was most recently amended on October 20, 1998. There have been a number of amendments to the Zoning Ordinance since then; however, none are directly related to development within the Fentress Overlay District. Attached is a chart briefly describing all amendments to the Zoning Ordinance since October 1998. If you need additional information regarding any of these amendments, please contact Assistant Planning Director Karen Shaffer.

There have been substantial amendments to the City's Subdivision Ordinance since October 1998. In summary, the amendments require engineering review of all subdivision plans and plats, clarifies that public improvements are required regardless of the size of the subdivision, and includes standards that determine what qualifies as an agricultural subdivision and a resubdivision. Finally, procedures for waivers from or deferral of required public improvements have been clarified.

In regards to the Fentress Overlay District, the Subdivision Ordinance revisions require that the following note be affixed to the subdivision plat for the whole or partial subdivision of property located within the overlay district: "This subdivision is located partially or wholly within an airport noise and/or safety zone and may be subject to above average noise levels (including noise levels experienced in United States Navy AICUA noise zone three) or to aircraft accidents."

If you need additional information or further clarification of these responses, please do not hesitate to call.

Cc: Laura Russell, Public Communications Specialist

City Clerk Moore identified the following speakers:

Carter McCrowell, 236 Mustang Trail, Suite 104, Virginia Beach, agent, did not speak, but was available for questions.

Carl Burns, 201 Whitehurst Road, representing self, advised that he did not wish to speak on this item. Mr. Burns stated that the speaker card had been completed incorrectly.

Council Member Krasnoff, on a motion seconded by Council Member Newman, moved for approval with stipulations.

There was no discussion.

On the motion, voting yes: Council Members Berry, de Triquet, Edge, Krasnoff, Newman, Parker, and Ward.

Voting no: None. (Council Member Duda was out of the chamber and Vice Mayor Butt was excused).

M. R(C)-98-02 PROJECT: Hall Property APPLICANT/AGENT: Herman Hall III/James Bradford PROPOSAL: Conditional rezoning request to rezone a 108± acre portion of a 274 acre site to R-15s Single-family Residential District. The site is presently zoned 250± acres A-1 Agricultural District, 21.5+ acres zoned RE-1 Residential Estate District, and 2.5± acres zoned R-15s Single-family Residential District. 166± acres would remain zoned A-1 Agricultural District. EXISTING COMPREHENSIVE LAND USE PLAN/DENSITY: Suburban Single-family Residential (1 unit to 4 units/acre) and Countryside Single-family Residential (1 unit/acre to 1 unit/10 acres) PROPOSED LAND USE/DENSITY: Same as existing LOCATION: Generally located south of Mt. Pleasant Road and east of School House Road. TAX MAP#: 0500000000020, 0500000000030, and 0620000000070. BOROUGH: Butts Road Borough

The Planning Commission recommends denial.

City Clerk Moore identified the following speakers in support of R(C)-98-02:

S. Grey Folkes, Jr., 325 Volvo Parkway, agent.

William L. Nusbaum, 1700 Dominion Tower, Norfolk, representing Lenora M. Wenger Trust.

Dennis Conrad, 505 Maxwell Street, representing Mt. Pleasant Christian School.

Lynn Keffer, 700 Bedford Street, representing self.

The following individuals spoke in opposition to R(C)-98-02:

Jim Tincher, 1716 Prospect Drive, representing self.

Fred Pierson, Code 00G, NAS Oceana, Virginia Beach, representing the U. S. Navy.

Tom Moore, 1612 Prospect Drive, representing self.

Ruth Tincher, 1716 Prospect Drive, representing self.

T. J. Carawan, 330 Hurdle Drive, representing self.

Council Member Newman asked those in the audience who are in support of R(C)-98-02 to please stand. Council Member Newman then asked those in opposition to R(C)-98-02 to stand.

There was discussion between Council Member Edge and Planning Director Nielson regarding the reasons Planning staff had recommended denial.

Council Member Edge requested that the U. S. Navy representative, Mr. Fred Pierson, come to the podium to answer questions. Council Member Edge asked Mr. Pierson whether the U. S. Navy had considered purchasing the air rights over the property described in this application. Mr. Pierson responded that to his knowledge there had not been an attempt by the U. S. Navy to purchase the air rights. Mr. Pierson also advised that the funds were limited from the U. S. Government for such purchases.

There was additional discussion between Council, Planning Director Nielson, and the U. S. Navy representative, Mr. Fred Pierson.

Council Member Duda, on a motion seconded by Council Member Parker, moved for approval with the following proffers as recommended by Planning Department staff:

1. The developer agrees that he shall widen Mount Pleasant Road to a minimum 24 ft. of pavement width from his easternmost access, west to Centerville Turnpike. Said improvements shall be made prior to recordation of the first major subdivision plat.

2. The developer agrees that all residential lots resulting from this application which front on School House Road shall be a minimum of one acre in size. In addition, any street which extends from School House Road shall terminate as a cul-de-sac. All lots created on such cul-de-sacs shall be a minimum of ½ acre in size. All dwellings constructed on or accessed by School House Road shall be full brick with a minimum 2,500 square feet of living space.

3. The developer agrees that he shall not seek more than 50 occupancy permits within any twelve month period, as measured from the date that the first such occupancy permit is issued. This schedule shall be considered as non-cumulative in nature.

4. The developer agrees that he shall fund the adjustment of the existing signalization at the intersection of Mt. Pleasant Road and Centerville Turnpike prior to recordation of the first major subdivision plat. Such improvements will be accomplished in accordance with a Public Works approved Plan.

5. The applicant agrees that all residential dwellings will be offered an alternate selection of exterior finishes to include brick, stone, stucco and hardboard cedar.

6. The developer agrees that all residential dwellings will be elevated on a crawl space, and that the foundation walls from finished grade to finished floor will be brick, stone, or stucco to match the exterior of the dwelling. The intent of this proffer is to preclude the use of any other material on foundation walls.

7. The developer agrees that a minimum of 25% of all residential dwellings will be constructed of brick on three sides.

8. Prior to any land disturbing activities on the property, applicant shall, at his sole expense, conduct necessary hydraulic studies and analyses, as required by the Director of the Department of Public Utilities ("Director"), to determine the nature and extent of improvements that must be made to the public water system in order to accommodate the water demands of the property without detriment to the public utility system. In the event that the Director determines that necessary improvements exceed the extension of existing water lines on Mt. Pleasant and Schoolhouse Roads, the applicant shall consent to and facilitate the placement of this rezoning on the City Council agenda for reconsideration and possible renovation of R-15s zoning. Should City Council revoke the rezoning on the basis of the applicant's inability or unwillingness to make improvements to the public water system, deemed necessary by the Director to accommodate the R-15s zoning, the applicant agrees not to challenge such action on the basis of vested rights or other grounds.

9. Appropriate notification and delineation of the (AICUZ) noise zone (3) shall be incorporated to the final plats, deeds, and physical surveys where said zone affects future construction. These notifications shall include descriptions and definitions pertaining to (AICUZ) noise level zone (3).

10. Should the AICUZ line be relocated within six months of the approval of this application in a manner which would affect this development, the developer agrees that the construction of residential units within the resulting AICUZ noise level zone (3) will adhere to the following criteria:

a) Windows: (double hung) Thermopane plus a storm window. Thermopane shall be of heavy glazing 1/8" glass with 11/16" air space. There shall also be a minimum of 2 3/4" air space between the Thermopane and the Storm window. Glass in the storm window should be of a different thickness to eliminate the possibility of resonance.

b) Patio Doors: Replace typical sliding patio doors with double french doors with insulated glass.

c) Walls: Shall be of 2x6 construction. "Sound-a-sote" sound deadening boards shall be installed between the studs and the exterior cladding. Insulation shall be 5 1/2" batt type. Resilient clips should be installed between studs and interior Sheetrock.

(d) Ceiling: Normal construction methods shall suffice, however, resilient clips shall be installed between ceiling rafters and Sheetrock. This assumes that roof construction will be of normal pitch with 1/2" sheathing with asphalt shingles. Ceiling shall be insulated with R-30 blown insulation.

11. The developer agrees that the following "ADDENDUM TO PURCHASE AGREEMENT" shall be incorporated to the future sales contracts of prospective homeowners within the AICUZ noise level zone (3).

#98-O-087 AN ORDINANCE AMENDING THE CHESAPEAKE ZONING ORDINANCE TO PROVIDE FOR THE REZONING OF A 108± ACRE PORTION OF A 274 ACRE SITE LOCATED SOUTH OF MT. PLEASANT ROAD AND EAST OF SCHOOL HOUSE ROAD, IN THE BUTTS ROAD BOROUGH, FROM A-1 AGRICULTURAL DISTRICT, RE-1 RESIDENTIAL ESTATE DISTRICT AND R-15s SINGLE-FAMILY RESIDENTIAL DISTRICT TO R-15s SINGLE-FAMILY RESIDENTIAL DISTRICT. (R(C)-98-02)

Council Member Edge asked some citizens in the audience who live in the area of the Fentress Air Field to come to the podium to state how the airplane noise has affected, if at all, their daily lives. Harold Bergey, 2117 Mount Pleasant Road, came to the podium.

On the motion, voting yes: Council Members Duda, Edge, Newman, Parker, and Ward.

Voting no: Council Members Berry, de Triquet, and Krasnoff. (Vice Mayor Butt was excused).

CITIZENS COMMENTS ON AGENDA ITEMS ONLY

City Clerk Moore identified the following speakers:

Sharon Hoel, 300 North George Washington Highway, representing Horton & Dodd, did not speak, but was available for questions regarding City Clerk Item (1) - CONSIDERATION OF USE PERMIT EXTENSION REQUEST for Circuit City (Carmax) (UP-95-49).

Carl Burns, 201 Whitehurst Road, representing self, spoke in opposition to City Clerk Item (1) - CONSIDERATION OF USE PERMIT EXTENSION REQUEST for Circuit City (Carmax) (UP-95-49).

T. J. Carawan, 330 Hurdle Drive, representing self, spoke in opposition to City Attorney Item (1) - A RESOLUTION AUTHORIZING THE CITY ATTORNEY TO INSTITUTE CONDEMNATION PROCEEDINGS AGAINST CERTAIN PROPERTY OWNED BY STANLEY F. C. TSENG AND FAYE L. TSENG CONTAINING 873.222± ACRES, IN THE PLEASANT GROVE BOROUGH OF THE CITY OF CHESAPEAKE, VIRGINIA, TO BE USED FOR WETLANDS MITIGATION; and City Clerk Item (1) - CONSIDERATION OF USE PERMIT EXTENSION REQUEST for Circuit City (Carmax) (UP-95-49).

CONSENT AGENDA

City Attorney Item

(1) A RESOLUTION AUTHORIZING THE CITY ATTORNEY TO INSTITUTE CONDEMNATION PROCEEDINGS AGAINST CERTAIN PROPERTY OWNED BY STANLEY F. C. TSENG AND FAYE L. TSENG CONTAINING 873.222± ACRES, IN THE PLEASANT GROVE BOROUGH OF THE CITY OF CHESAPEAKE, VIRGINIA, TO BE USED FOR WETLANDS MITIGATION

City Attorney Hallman requested that City Attorney Item (1) be withdrawn.

DEPARTMENT OF THE NAVY

COMMANDER IN CHIEF
U. S. ATLANTIC FLEET
1562 MITSCHER AVENUE SUITE 250
NORFOLK, VA. 23551-2487

5090
Ser N4683/000675
28 Dec 00

Mr. M. G. Pine, Jr.
Chairman
Chesapeake Jet Noise Task Force
1124 Murray Drive
Chesapeake, VA 23322

Dear Mr. Pine:

SUBJECT: CHESAPEAKE JET NOISE TASK FORCE QUESTIONS

In response to your letter of November 11, 2000, I contacted the appropriate individuals cognizant of the information you requested and have compiled the answers in enclosure (1). Enclosure (2) depicts the restrictive easements around NALF Fentress.

Should you require further assistance, please feel free to contact me at (757) 836-3674 or by E-Mail: loganpe@clf.navy.mil.

Sincerely,

P. E. LOGAN
Branch Head for Operational
Support/Requirements
Shore Activities Readiness
Acting

Enclosures: (1) Response to questions
(2) Restrictive Easements around NALF Fentress

1. Q. What are the allowable variances in altitude throughout the FCLP flight pattern at Fentress?

Ans: The pattern altitude at NALF Fentress is 800 feet. Following a practice landing, aircraft departing the runway are required to obtain an altitude of 800 feet before commencing the left-hand turn. To maintain proper interval on other air traffic in the pattern, this turn might start earlier or extend further upwind. Flight track altitude is 800 feet with the aircraft starting its descent approximately 1.5 miles abeam the point of touchdown for runway 5, or 2.2 miles abeam the point of touchdown for runway 23. From the abeam position, the aircraft altitude will decrease at a rate of 300-500 feet per minute until runway touchdown. Pilots are instructed to follow these procedures as exactly as possible. There are no published variances.

2. Q. What altitude monitoring capability currently exists at Fentress?

Ans: Altitude monitoring is conducted visually by occasional observation by NAS OCEANA personnel and the Landing Signal Officer (LSO). The best altitude monitor is the pilot in the aircraft who is doing everything he can to fly the correct pattern.

3. Q. What additional pattern monitoring capabilities are being looked at for the future?

Ans: The establishment of a rotating beacon (red light) sited on the downwind leg of runway 05 at NALF Fentress, 1.5 miles abeam the landing touchdown area, will assist aircraft in maintaining a tight pattern. CO, NAS OCEANA will evaluate the possibility of placing a similar beacon on the pattern for runway 23.

4. Q. Where is the designated holding area, and at what altitude, for aircraft waiting to enter the pattern at Fentress?

Ans: Aircraft proceeding to NALF Fentress enter the pattern directly. If an aircraft must hold to await entry into the landing pattern, the holding area is 29 miles south of NAS OCEANA at an altitude of 11,000 feet or above.

5. Q. What initiatives, besides pattern monitoring, is the Navy researching to mitigate the noise situation?

Ans: In addition to the Hush House currently under construction, the Navy is investigating the possibility of building an additional outlying field (OLF) that would share FCLP operations with NALF Fentress. This additional OLF would only be constructed should the decision be made to site the new F/A-18 E/F Super Hornets at NAS OCEANA.

6. Q. What else can be done to reduce the number of jet operations at Fentress after midnight?

Ans: Flight operations at NALF Fentress are based on aircraft carrier deployment schedules and pilot qualifications on board the aircraft carriers for our training squadrons. These operations will fluctuate during the year as a result of these training requirements.

7. Q. What will it cost the Navy in time, money and inconvenience to activate an outlying field to reduce the load at Fentress? (estimates only)

Ans: The Navy is currently conducting OLF studies on three sites (NAS OCEANA, MCAS CHERRY POINT and MCAS BEAUFORT) as part of the F/A-18 E/F Super Hornet basing Environmental Impact Statement (EIS) (NAS MERIDIAN already has a viable OLF). A decision on the requirement to construct an OLF will be predicated on the final basing decision, which is projected to be made in late 2002. Preliminary estimates on the cost of building an OLF range from $40M to $115M. The large range in cost is based on estimates for purchasing sufficient land to construct an OLF, current land use and number of owners. "Inconvenience costs" depend on the distance to the OLF and the OLF's proximity to infrastructure (roads, electrical and sewer service, housing and personal service establishments). These issues may result in increased airframe wear and fuel costs for the aircraft and Quality of Life (QOL) issues for the sailors operating and maintaining the field.

8. Q. Given the Navy can find a suitable alternative to Fentress, is three to five years a reasonable estimate of the time required to activate it?

Ans: Based on the requirement to do National Environmental Policy Act (NEPA) studies, land acquisition and construction, a four-to-five year estimate for activation is reasonable. An

additional OLF would only be constructed should the decision be made to site the new F/A-18 E/F Super Hornets at NAS OCEANA.

9. Q. Do aircraft transiting to and from the Dare County Range fly over Fentress, and if so, at what altitude?

Ans: Aircraft returning from the southern operating areas may pass on either side of NALF Fentress as they line up for the designated runway at NAS OCEANA. Most overflights occur when runway 05 is in use at NAS OCEANA. These aircraft are normally at an altitude of 1500 feet or greater.

10. Q. What is the Landing Signal Officer's responsibility during operations at Fentress?

Ans: The LSO is responsible for interval separation between FCLP aircraft in the pattern, which is part of overall pattern discipline. The LSO briefs all pilots before flight to ensure safe conduct of flight operations at NALF Fentress and coordinates arrival and return flights with air traffic control at NAS OCEANA.

11. Q. Could the Navy provide the Task Force with a map showing the properties over which the Navy owns development rights in the vicinity of Fentress?

Ans: Yes, the map is included as part of this package.

12. Q. Our understanding is that the current AICUZ maps were drawn using a base altitude of 1000 feet. Will the EIS for the F/A-18 E/F reflect changes to the AICUZ zones based on an 800 foot pattern, normally flown at Fentress, or will they still reflect a 1000 foot base altitude?

Ans: The noise model for Oceana/Fentress was based on a 1,000 foot pattern altitude at NAS OCEANA and an 800 foot pattern altitude at NALF Fentress. The F/A-18 E/F EIS will also use these altitudes.

13. Q. Could a separate AICUZ map, based on an 800-foot pattern, be developed for the Fentress area?

Ans: The AICUZ map will show both NAS OCEANA and NALF Fentress. NAS OCEANA will be modeled for a 1000 foot pattern and NALF Fentress will be modeled for an 800 foot pattern.

14. Q. Has the Navy conducted noise studies performed on the F/A-18 at other than 1000 feet?

Ans: The Navy has noise data for slant ranges from 200 ft. to 25,000 ft. from the aircraft and these will be addressed in the F/A-18 E/F EIS.

15. Q. Would the Navy be willing to add a statement on the AICUZ map indicating the peak noise in decibels for an F/A-18 single incident at 800 feet?

Ans: As in the C/D EIS, we will provide single event noise levels in a table for various modes of flight. We will provide the Lmax and the cumulative exposure during the event all pegged to a specific altitude.

16. Q. Has the Navy ever conducted any studies on the emotional and physical effects of jet noise exposure?

Ans: The Navy has not conducted studies on the emotional and physical aspects of jet noise. Instead, we have relied on existing scientific research in this area. The Navy will conduct a detailed literature search for valid studies which address noise issues for inclusion in the F/A-18 E/F EIS.

17. Q. Can anything be done, within reason, to re-engineer the F/A-18 for quieter operation?

Ans: The Navy is looking at propulsion initiatives that have the potential of reducing noise. However, Naval aircraft Key Performance Parameters (KPPs) are very specific as to required range, speed, combat stores capability. Engineering solutions may be devised that effect sound reduction but, if they impinge on KPPs, they must be rejected as long as meeting the F/A-18's combat mission remains of paramount importance. As of this date no reasonable sound reduction systems have been developed that reduce noise without also reducing KPPs.

18. Q. The noise Hotline is a source of great concern for some citizens. What is the current procedure for the Hotline and how many phone lines are available for this service?

Ans: Citizens can call 433-2162, 24 hours-a-day to make an aircraft noise complaint. There is one dedicated telephone line; however, this line can also be used for normal air operations business. The civilian personnel and petty officers

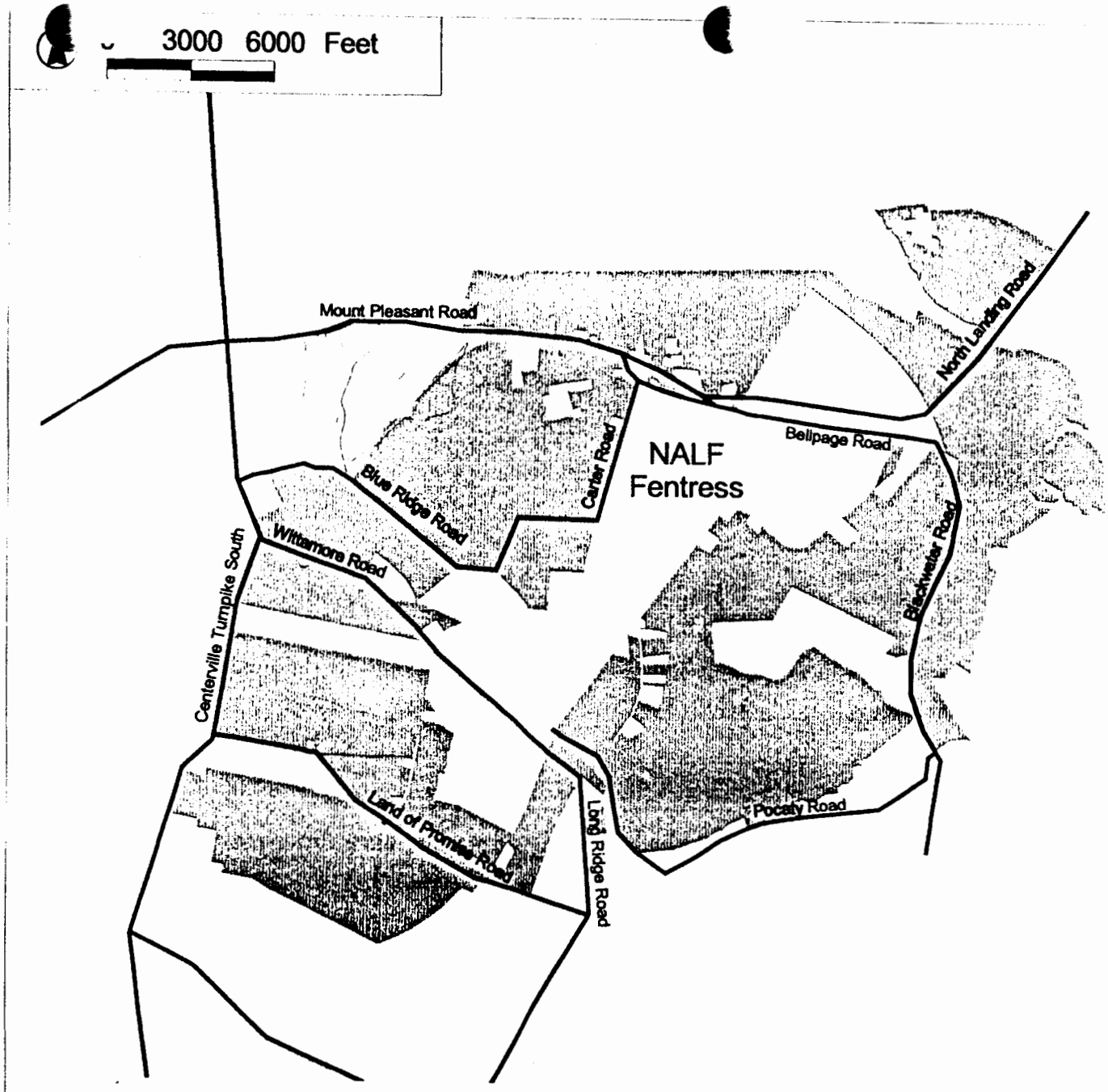
answering this line have normal duties that they must perform in addition to answering noise complaints.

19. Q. Can the system be further improved to include such features as the rotary stacking of calls, automatic call back when a line is free or other features which may improve community inter- action?

Ans: Currently the NAS OCEANA telephone system precludes these upgrades. NAS OCEANA is in the process of upgrading their phone system and will then examine options available to improve customer service.

20. Q. What is the current follow-up call back policy? Many people comment they have never received a call back.

Ans: The Navy's policy is to return all calls. Periodically a call might be missed but, as a general rule, all callers who request a follow-up call will receive one. The Navy considers it important to respond to all calls, favorable or otherwise. The return call allows NAS OCEANA personnel the opportunity to better explain flight operations that might have contributed to the specific complaint. If your constituents note they did not receive a return call, you can advise them to either try to call again or send a letter to the Commanding Officer, NAS OCEANA noting the circumstances. Again, it is CO, NAS OCEANA's goal to work with the surrounding communities.



Note: This map is representative of the easements acquired by the Navy. To determine whether a property contains a restrictive easement requires a legal title search.

Source: U.S. Department of the Navy 1999

Figure 6-7 Restrictive Easements Around NALF Fentress

Chesapeake
VIRGINIA

City of Chesapeake
Department of Planning
Post Office Box 15225
Chesapeake, Virginia 23328-5225
(757) 382-6176
FAX (757) 382-6406

MEMORANDUM

TO: AMAR DWARKANATH, DEPUTY CITY MANAGER
OPERATIONS/WATER RESOURCES

FROM: BRENT R. NIELSON, AICP, DIRECTOR OF PLANNING

DATE: JULY 28, 2005

RE: CHESAPEAKE JET NOISE TASK FORCE RECOMMENDATION

The following is a listing of the recommendations contained in the "Final Report of the Chesapeake Jet Noise Task Force" (dated May 2, 2001) that have been pursued by the City of Chesapeake:

1. The Planning Department and Planning Commission should continue to consider jet noise and its possible impact on proposed land use.

2. If the F/A-18 E/F aircraft become locally based, the City should proceed with the Joint Land Use Study (JLUS) in conjunction with the Navy and Council should seriously consider the JLUS results when making land use decisions.

3. The City should encourage the Navy to purchase additional air rights, thereby compensating landowners for giving up development rights and the additional purchases will limit residential development surrounding Fentress.

4. The City must ensure strict compliance with the Uniform Statewide Building Code that provides for a sound reduction within the AICUZ zones.

5. To the extent permitted under state law, the City should change the current City ordinance so that if a lot falls in multiple noise zones, that lot should have to meet the criteria of the most restrictive zone.

6. The City should adopt an ordinance to amend the City Code section 12-204 to require a more complete disclosure to any potential purchaser and/or tenant of property that falls within any of the designated noise

zones and the proposed noise sensitivity zone. Legal remedies for non-compliance should also be identified.

7. The Chesapeake Noise Disclosure Ordinance should use the AICUZ decibel designations rather than the numerical zone designations.

8. The City should require every seller/landlord of property within AICUZ noise zones or the proposed noise sensitivity zone to fully disclose the noise zone to every potential purchaser/tenant prior to contractual obligation.

Please let me know if you have any questions regarding this response.

BRN/brt

cc: Anne F. Odell, Deputy City Manager
Administration/Long-Range Planning

§ 12-100. Intent.

The special overlay districts are intended to provide alternative or additional development standards for one or more existing zones within the city for the comprehensive planning of areas with special features or unique land resources that need to be addressed in more detail than the existing zoning categories allow. The regulations established herein are designed to supplement or "overlay" the requirements and provisions established for the zoning district in which located. All requirements of the underlying zoning district shall remain applicable unless specifically modified by the provision established herein.

§ 12-200. Establishment of districts.

§ 12-201. Action by the planning director.

The planning director shall prepare proposed ordinances for the establishment of overlay districts. Each proposed ordinance shall be accompanied by a written report including but not limited to:

1. A description of the study area, an analysis of existing land uses and structures and analysis of unique characteristics or features of the area, potentials for development, a discussion of applicable policies and land use designations established in the comprehensive plan and other pertinent matters.
2. Analysis of adjacent lands not included in the study area but which will be impacted by the overlay district and recommendations made as possible actions which should be taken or encouraged.
3. Specific findings regarding the need for the proposed overlay district in order to implement the comprehensive plan and associated policies.
4. Recommendations concerning detailed regulations to be applied within the district and within any transitional areas, including permitted and conditional principal and accessory uses and structures; minimum lot, yard and building specifications; maximum building coverage by all buildings; maximum height of structures; off-street parking and loading requirements; control of signs; exterior character of buildings if applicable; landscaping and general appearance of premises; and other controls necessary to meet the intent of the proposed overlay district.
5. Such report may also include known plans for public and private action in or adjoining the district.
6. Proposed ordinance and associated reports shall be made available for public comment prior to the planning commission review and action.

§ 12-202. Action by the planning commission.

The planning commission shall review such proposed ordinances and the accompanying reports. The commission shall transmit such ordinances and reports together with its recommendations through the planning director to the city council for its consideration and action. The commission shall recommend approval in whole or in part, with or without modifications, or shall recommend denial thereof.

§ 12-203. Action by city council.

The city council shall create each overlay district by ordinance, if it finds that the district is in fact significant and meets the intent of the zoning ordinance and the comprehensive plan.

§ 12-300. Urban, suburban, countryside and rural overlay districts.

A description and development standards for the urban, suburban, countryside and rural overlay districts is set forth in article 5 of this zoning ordinance.

§ 12-400. Fentress Airfield overlay district.

§ 12-401. Creation of Fentress Airfield overlay district.

There is hereby created the "Fentress Airfield overlay district" of the city of Chesapeake. All properties, lots, subdivisions and developments

located partially or wholly within this district shall be subject to the provisions set out below. This enactment is based on the authority granted by sections 15.2-2280, 15-2-2283 and 15.2-2295 of the Virginia Code.
(Ord. No. 98-O-158, 10-20-98; Ord. No. 04-O-057, 4-20-04)

§ 12-402. Findings of fact.

Fentress Airfield is an auxiliary landing strip, located in the southern portion of the city, which is utilized by the U.S. Navy as part of its NAS Oceana operation. The airfield is used primarily for simulated aircraft carrier landings and has been used in that capacity since World War II. In response to residential growth in southern Chesapeake in the area near the airfield, the Department of Defense established the Air Installation Compatible Use Zone (AICUZ) program in 1973, which analyzed the impact of the noise from aircraft operations at the field on existing and potential development in the area. The AICUZ program delineates the following three noise contours around the airfield: 1) noise levels between 65 and 70 DNL, 2) noise levels between 70 and 75 DNL, and 3) noise levels greater than 75 DNL. Because of the Navy's concerns over possible conflict between its Fentress operations and continued residential growth , it purchased development rights on over eight thousand seven hundred (8,700) acres of land within that area to prevent residential development, and it published recommendations for various nonresidential uses which would be more compatible with the airfield operations. The Navy amended its AICUZ program in 1998 to reflect the proposed expansion of airfield operations, said amendments being depicted on that certain document entitled the 1999 "Composite AICUZ - NALF Fentress".

The council finds that residential development and certain commercial and assembly uses and other related supporting uses such as churches, schools and child day care centers within the noise contour greater than 75DNL are not compatible with the existing Fentress operation. Most properties within this area are best suited for agricultural operations and the council intends to continue agricultural operations as the predominant use in this area. Accordingly, some limited commercial and industrial development which does not place significant demands on existing infrastructure and which can be constructed, landscaped and operated in a manner which does not detract from the rural character of the area would, in certain limited circumstances, be compatible with the community located within the noise contours. In addition, the council finds that certain notice requirements should be implemented to alert the public that certain property, buildings and structures are situated partially or wholly within the noise contours.
(Ord. No. 98-O-158, 10-20-98; Ord. No. 04-O-057, 4-20-04)

§ 12-403. Purpose and intent.

This ordinance is enacted to regulate commercial and industrial development within the area of southern Chesapeake identified in section 12-404 below as noise contour greater than 75 DNL , subject to case-by-case review by the planning commission and city council through the conditional use permit process to ensure that any proposed commercial or industrial use is compatible with the Fentress operations and with the surrounding rural area in which it is located and does not improperly burden the existing city infrastructure and services which have been developed for a community that is predominantly rural in nature. This ordinance is also enacted to require additional performance standards and development standards for noise contours greater than 75 DNL and notice requirements for residential and nonresidential development in all the contours.
(Ord. No. 98-O-158, 10-20-98; Ord. No. 04-O-057, 4-20-04)

§ 12-404. District boundaries.

A. The Fentress Airfield overlay district shall include all lots, properties, subdivisions and developments located partially or wholly within the AICUZ noise contours 65—70 DNL, 70—75 DNL and greater than 75 DNL on that certain map entitled the 1999 "Composite AICUZ - NALF Fentress," including all future amendments.

B. All lots, properties, subdivisions and developments located partially or wholly within the Fentress Airfield overlay district shall comply with the provisions of 12-400 et. seq. as follows:

1. All lots, properties, subdivisions and developments located partially or wholly within noise contours greater than 75 DNL shall comply with all sections of 12-400 et. seq. including sections 12-405, 12-406, 12-407 and 12-408.

2. All lots, properties, subdivisions and developments located partially or wholly within noise contour 65-70 DNL and noise contour 70-75 DNL shall only comply with sections 12-407 and 12-408.B and C.

C. Within thirty (30) days of any amendment to the 1999 "Composite AICUZ - NALF Fentress," the planning director, or designee, shall provide written notice to the last known address of all affected property owners, advising them of the amendment and whether the property has been included in or deleted from the Fentress Airfield overlay district.

(Ord. No. 04-O-057, 4-20-04)

Editor's note—Ord. No. 04-O-057, adopted April 20, 2004, amended § 12-404 in its entirety to read as herein set out. Formerly, § 12-404 pertained to area of applicability and derived from Ord. No. 98-O-158, adopted October 20, 1998.

§ 12-405. Permitted and conditional uses for properties located within the Fentress Airfield overlay district.

A. The inclusion of property within the Fentress Airfield overlay district shall not limit or prohibit any development of such property which is allowed under the zoning classification of that property subject to the conditions set forth herein.

B. In addition to the permitted and conditional uses allowed for any lot located partially or wholly within the Fentress Airfield overlay district under that property's zoning classification, any of the following uses may be authorized, provided that a conditional use permit is granted in accordance with the standards set out below and in article 17 or the zoning ordinance.

SIC	*TITLE AND CONDITIONS WHERE APPLICABLE*	*STATUS*
0241	Diary Farms	C
14	Excavation, in accordance with section 13-1200 et seq. of this ordinance and chapter 26, article VII (section 26-221 et seq.), of the city Code	C
154	General Building Contractors	C
171	Plumbing, Heating and Air Conditioning	C
204	Grain Mill Products	C
205	Bakery Products	C
2086	Bottled and Canned Drinks and Carbonated Waters	C
209	Miscellaneous Food Preparations and Kindred Products, Not Including Processing of Meat, Seafood, Poultry, Vinegar or Yeast	C
242	Sawmills and Planing Mills	C
243	Millwork, Veneer, Plywood and Structural Wood Members	C
2621	Paper Mills, Limited to Bag Manufacturing Only	C
27	Printing, Publishing and Allied Products	C
3273	Ready-Mix Concrete	C
328	Cut Stone and Stone Products	C
329	Abrasive, Asbestos and Miscellaneous Nonmetallic Mineral Products	C
3444	Sheet Metal Work	C
3732	Boat Building and Repairing, provided that all operations are carried out in a completely enclosed building	C
3827	Optical Instruments and Lenses	C
3873	Watches, Clocks, Clockwork-Operated Devices and Parts	C
3915	Jeweler's Findings and Materials, Lapidary Work	C
3931	Musical Instruments	C
399	Miscellaneous Manufacturing Industries, limited to assembly of previously prepared parts into finished products, not otherwise named herein, provided no operations are carried on which will create smoke, fumes, noise, odor or dust and specifically approved by the zoning administrator	C

SIC	TITLE AND CONDITIONS WHERE APPLICABLE	STATUS
3993	Signs and Advertising Specialties	C
4011	Railroads, Line-Haul Operating	C
4222	Refrigerated Warehousing and Storage	C
4225	General Warehousing and Storage	C
5031	Lumber, Plywood, Millwork and Wood Panels—Wholesale Trade	C
5083	Farm and Garden Machinery and Equipment—Wholesale Trade, provided that all display areas meet the minimum development standards set forth in section 12-406 below	C
5112	Wholesale Stationery and Office Supplies, Including Wholesale Office Equipment, Sales and Service	
518	Beer, Wine and Distilled Alcoholic Beverages—Wholesale Trade	C
5191	Farm Supplies—Wholesale Trade	C
5199	Nondurable Goods Not Elsewhere Classified, Wholesale Distribution Only	C
5211	Lumber and Other Building Materials Dealers	C
5261	Retail Nurseries, Lawn and Garden Supply Stores	C
6553	Cemeteries and Cemetery Subdividers and Developers	C
7216	Dry Cleaning Plants, Except Rug Cleaning	C
7217	Carpet and Upholstery Cleaning	C
7219	Laundry and Garment Services, Not Elsewhere Classified, Limited to Fur Storage Only	C
7532	Automotive Top, Body and Upholstery Repair Shops and Paint Shops, provided that all operations and storage are carried out in a completely enclosed building	C
7538	General Automotive Repair, provided that all operations and storage are carried out in a completely enclosed building	C
7692	Welding Repair, provided that all operations and storage are carried out in a completely enclosed building	C
7699	Repair Shops Not Elsewhere Classified and Limited to Repair and Servicing of Office, Household and Industrial Equipment, Agricultural Equipment Repair and Blacksmith Shop, provided that all operations and storage are carried out in a completely enclosed building	C
7699	Agricultural Equipment Sales	C
7992	Public Golf Courses, Not Including Clubhouses	C
7997	Membership Sports and Recreation Clubs, Not Including Flying Fields, Aviation Clubs or Clubhouses	C
7999	Amusement and Recreation Services, Not Elsewhere Classified and Limited to Boat Landings and Docks and Incidental Refreshment Facilities	C
807	Medical and Dental Laboratories	C

SIC	TITLE AND CONDITIONS WHERE APPLICABLE	STATUS
873	Research, Development and Testing Services	C
922	Public Order and Safety, Not Including Correctional Institutions	C

(Ord. No. 98-O-158, 10-20-98)

§ 12-406. Minimum development standards.

A. No conditional use permit application shall be granted unless, and in addition to meeting the criteria for granting conditional use permits set out in article 17 of this zoning ordinance, the property and proposed buildings and structures meet the following minimum standards (the Chesapeake health department may require larger lots, widths and setbacks necessary for adequate sewage disposal):

1. Minimum lot size shall be prescribed by the underlying zoning district.

2. Minimum building setback from a public street shall be one hundred fifty (150) feet. This setback distance may be reduced, up to a minimum setback of fifty (50) feet, if landscaping approved by city council is provided which screens the building from public view from the street.

3. If parking is proposed between the building and any street bordering the property, there shall be a buffer and landscaping arranged so that the parking lot is effectively screened from public view from the street.

4. Side and rear yards shall be a minimum of thirty (30) feet.

5. A four-foot high landscaped berm with a 3:1 slope and a two-foot wide top shall be installed between any proposed use and any existing residential unit located within five hundred (500) feet of any building on the lot on which the use is located. Such berm at a minimum shall be equal in length to the side of the building facing the residential unit. This berm requirement may be waived if existing or proposed trees or other vegetation are determined to provide comparable screening.

6. All lighting shall be directed toward the interior of the development. No lighting shall be used that interferes with airfield operations. The extent of light interference, if any, will be determined by the U.S. Navy.

7. No building or structure shall exceed the U.S. Navy's recommended height restrictions under its AICUZ program. This provision shall not be construed to permit any building or structure to exceed the maximum height permitted by the zoning ordinance.

8. Noise level reduction schedule:

   a. All occupied buildings and structures located in noise contour 75 DNL or greater must achieve an outdoor to indoor noise level reduction of 35 dB.

B. In addition to the standards set out above, any conditional use approved for property located within the Fentress Airfield overlay district shall comply with the requirements of the zoning classification in which such use is permitted under the zoning ordinance.

C. The planning commission may recommend and the city council may impose such additional conditions and requirements for approval of a use permit application as may be deemed necessary and appropriate to ensure the compatibility of the proposed use with the surrounding neighborhood, as provided for in article 17 of this zoning ordinance.

D. A site plan and a landscape plan shall be submitted to the planning commission for approval for any conditional use approved for property located within the Fentress Airfield overlay district. All final site plans shall contain disclosure provisions as required by section 12-407 below.

E. The following certifications must be acquired to obtain a building permit and a certificate of occupancy for any nonresidential occupied building or structure requiring a conditional use permit under section 12-405 above:

1. In order to obtain a building permit, an acoustical engineer must certify on the building plan that the building plan complies with the noise reduction schedule required by section 12-406.
2. In order to obtain a certificate of occupancy, an acoustical engineer must certify that the buildings and structures comply with the noise reduction schedule required by section 12-406.

(Ord. No. 98-O-158, 10-20-98; Ord. No. 04-O-057, 4-20-04)

§ 12-407. Disclosure provisions on nonresidential final site plans, recorded surveys and subdivision plats.

In accordance with section 15.2-2295 of the Code of Virginia, 1950, as amended, all approved final site plans, recorded surveys and subdivision plats depicting properties, lots, subdivisions and developments located partially or wholly within the Fentress Airfield overlay district shall contain a statement as follows: "This development is located partially or wholly within an aircraft noise and/or accident zone and may be subject to above average noise levels or to aircraft accidents."

(Ord. No. 04-O-057, 4-20-04)

Editor's note—Ord. No. 04-O-057, adopted April 20, 2004, amended § 12-407 to read as herein set out. Formerly, § 12-407 pertained to disclosure provisions on nonresidential final site plans and derived from Ord. No. 98-O-158, adopted October 20, 1998.

Sec. 12-408. Special building and disclosure requirements for residential development.

A. Pursuant to the authority granted in section 15.2-2295 of the Code of Virginia, 1950, as amended, all residential dwellings located in or on lots, subdivisions or developments located partially or wholly within the Fentress Airfield overlay district shall be constructed in conformance with sound transmission control regulations and airport noise attenuation standards set out in the Virginia Uniform Statewide Building Code, as amended. Such building code regulations shall also apply to additions and structural alterations to residential dwellings; except that additions and structural alterations to residential dwellings existing on the effective date of this ordinance (October 20, 1998) shall be exempt from conformance with the Virginia Uniform Statewide Building Code. A residential dwelling shall be considered existing on the effective date of this ordinance if a certificate of occupancy has been issued for the dwelling or the dwelling is occupied for residential purposes.

B. In accordance with section 15.2-2295 of the Code of Virginia, 1950, as amended, all approved final site plans, recorded surveys and subdivision plats for residential developments and subdivisions located partially or wholly within the Fentress Airfield overlay district shall contain a statement as follows: "This development or subdivision is located partially or wholly within an aircraft noise and/or accident zone and may be subject to above average noise levels or to aircraft accidents."

C. In addition to the disclosures required by sections 12-407 and 12-408.B above, any person marketing for sale, lease or any form of conveyance of interest in property partially or wholly within the Fentress Airfield overlay district shall provide written disclosure to all prospective purchasers, renters or transferees that such property is located within the Fentress Airfield overlay district. Such written notification shall also be placed in all sales contracts, leases and contracts for all other forms of conveyance. This requirement shall not apply to property sold, leased or otherwise transferred solely for agricultural purposes.

(Ord. No. 98-O-158, 10-20-98; Ord. No. 04-O-057, 4-20-04)